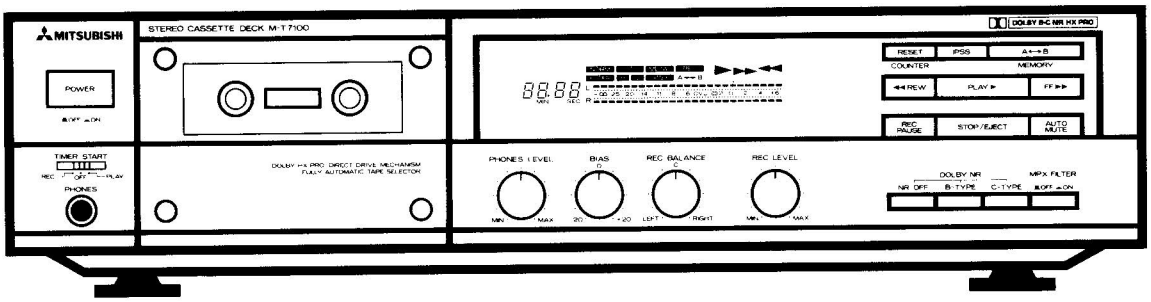
MITSUBISHI
AUDIO SYSTEMS

# SERVICE MANUAL

## STEREO CASSETTE DECK

# MODEL M-T7100




## SPECIFICATIONS

| | |
|---|---|
| **Track system** | 4 track 2 channel stereo |
| **Heads** | Twin Field head for recording and playback × 1<br>Erase head × 1 |
| **Motors** | Direct drive FG servo motor for capstan drive × 1<br>DC motor for reel drive × 1<br>DC motor for cam drive and tape Eject/Loading × 1 |
| **Wow & flutter** | 0.027% WRMS (JIS), 0.045% (DIN) |
| **S/N (METAL)** | 59dB (Measured via tape with 3% THD recording level)<br>Dolby B type NR switch ON: Improves up to 5dB at 1KHz, 10dB above 5KHz<br>Dolby C type NR switch ON: Improves up to 15dB at 500Hz, 20dB at 1KHz to 10KHz |
| **T.H.D.** | Less than 0.8% (Metal) |
| **Frequency response** | |
| **NORM** | 25Hz to 17,000Hz ±3dB |
| **$CrO_2$** | 25Hz to 18,000Hz ±3dB |
| **METAL** | 25Hz to 20,000Hz ±3dB |
| **Input sensitivity/Impedance** | |
| **LINE IN** | 70mV/47kohms |
| **Output sensitivity/Impedance** | |
| **LINE** | 388mV/2.7kohms |
| **PHONES** | 1.3mW (8ohms) |
| **Power requirements** | 220V, 50Hz for Europe except UK |
| **Dimensions** | 425(W) × 112(H) × 352(D) mm (16.7 × 4.4 × 13.9 inches) |
| **Weight** | 6.5 kg (14.3 lbs) |
| **Standard accessories** | |
| Connection cords | 2 |

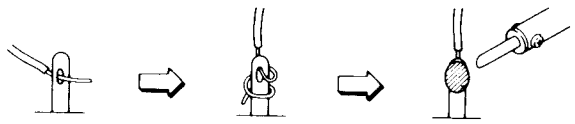
* For improvement purposes, specifications and design are subject to change without notice.

MITSUBISHI ELECTRIC CORPORATION

# ★SAFETY INSTRUCTIONS

## PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, others parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replased only with specified replacement.
   Examples: RF cables, noise blocking capacitors, noise blocking filters, etc..
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation Seets for transistors
   5) Plastic Screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatskins, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repared locations.
9. Use care that foreign objects (screws, solder droplets, ect.) do not remain inside that set.

## SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10M ohms. but for equipment with external antenna terminals (tuner, reciever, etc.) and is intend for [C] or [A], specified insulation resistance should be headphone jacks line in out jacks etc. more than 2.2M ohms (ground terminals, microphone jacks).

# ★INFORMATION

## SYMBOLS FOR PRIMARY DESTINATION

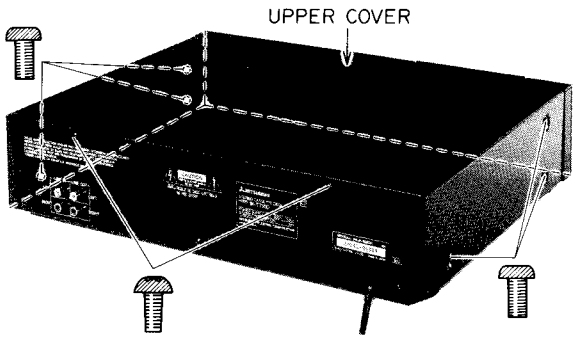
Alphabet indicates the destination of the units as listed below.

| Symbols | Principal Destinations |
|---|---|
| [E] | Europe (except UK) |
| [V] | W.Germany |

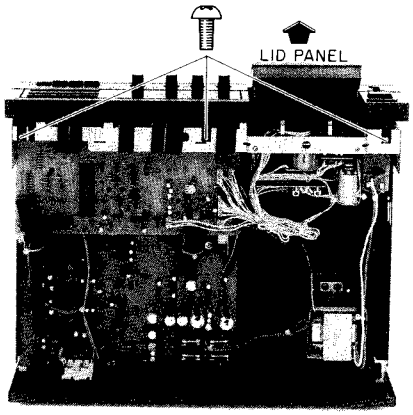
# I. DISASSEMBLY

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

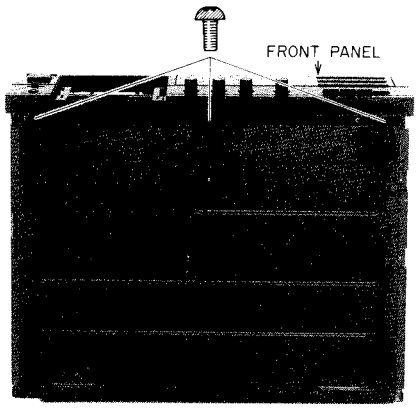
1. Removal of UPPER COVER



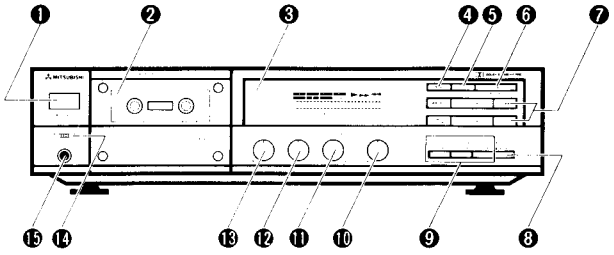

2. Removal of FRONT PANEL




* Remove the LID PANEL first then remove the FRONT PANEL. (Turn on the Power and press the EDJECT button.)

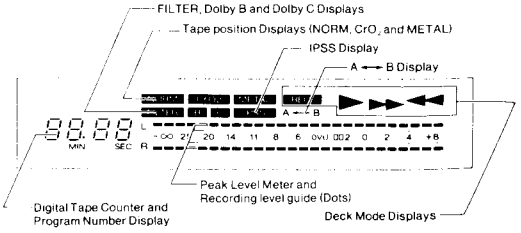



# II. CONTROLS




1. **POWER Switch**
   To turn ON and OFF the power.
2. **Cassette lid and cassette holder (Power assisted)**
   Load a cassette tape here. To open, press the STOP/EJECT button. To close, press once again. Do not manually open this cassette holder, as it may damage your equipment.
3. **FL (Fluorescent) Display**
   Tells you what the cassette deck is doing.
4. **COUNTER RESET button**
   To reset the digital counter to "00.00".
5. **IPSS buttton**
   To select playback with the IPSS system.
6. **A ⟷ B MEMORY button**
   For memorization of a selection(s) or part of a selection that you wish to hear repeatedly. Also used with
7. **Operating buttons**
   For playback and recording operations.
   Press the STOP/EJECT button to open and close the cassette holder.
8. **MPX (Multiplex) FILTER switch**
   To turn on and off the multiplex filter.
9. **Noise reduction selector (NR OFF, DOLBY B and DOLBY C)**
   To select noise reduction for recording and playback purposes.
10. **REC LEVEL control**
    To set recording levels. The level adjustment is the same amount for both right and left channels.
11. **REC BALANCE control**
    To set the left and right channel balance of recording input levels.
12. **BIAS control**
    To set the recording bias current. The bias adjustment range is between −20% and +20% of the proper bias current of each tape position. If using a reference tape recommended for use with the cassette deck, set this control to the center click "0" position.
13. **PHONES LEVEL control**
    To adjust the output level of the PHONES jack.
14. **TIMER START Switch**
    For absentee recording and timed playback.
15. **PHONES jack**
    To listen through a pair of headphones, connect them to this jack.

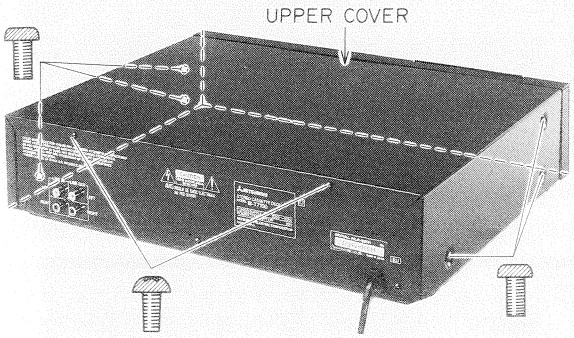
## FL (Fluorescent) Display


FILTER, Dolby B and Dolby C Displays
Tape position Displays (NORM, CrO2 and METAL)
IPSS Display
A ⟷ B Display
Peak Level Meter and Recording level guide (Dots)
Digital Tape Counter and Program Number Display
Deck Mode Displays

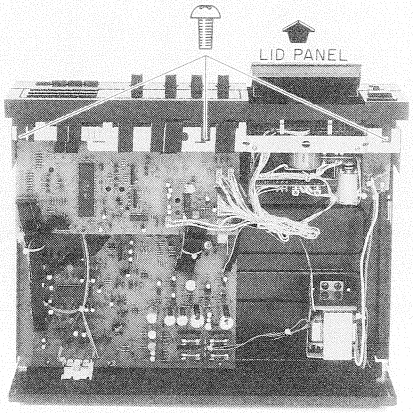
# I. DISASSEMBLY

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

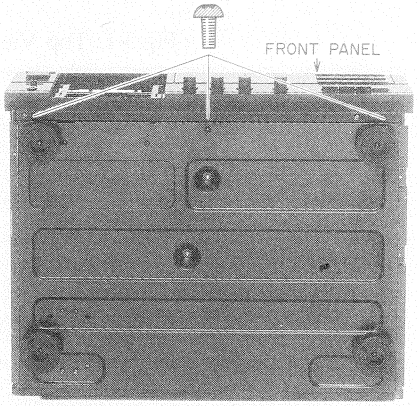
1. Removal of UPPER COVER



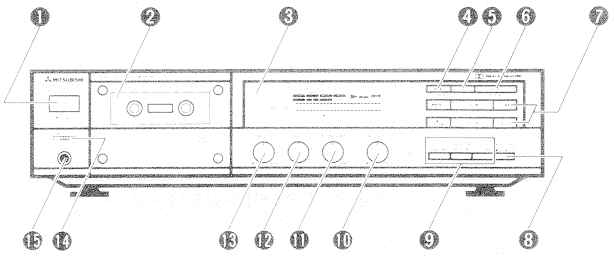

2. Removal of FRONT PANEL




* Remove the LID PANEL first then remove the FRONT PANEL. (Turn on the Power and press the EDJECT button.)

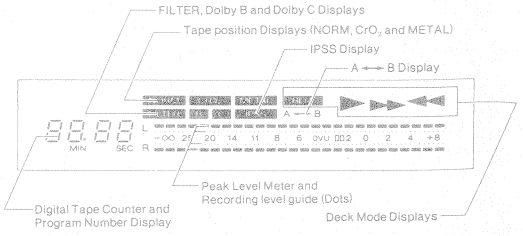



# II. CONTROLS




1. **POWER Switch**
   To turn ON and OFF the power.
2. **Cassette lid and cassette holder (Power assisted)**
   Load a cassette tape here. To open, press the STOP/EJECT button. To close, press once again. Do not manually open this cassette holder, as it may damage your equipment.
3. **FL (Fluorescent) Display**
   Tells you what the cassette deck is doing.
4. **COUNTER RESET button**
   To reset the digital counter to "00.00".
5. **IPSS buttton**
   To select playback with the IPSS system.
6. **A ⟷ B MEMORY button**
   For memorization of a selection(s) or part of a selection that you wish to hear repeatedly. Also used with
7. **Operating buttons**
   For playback and recording operations. Press the STOP/EJECT button to open and close the cassette holder.
8. **MPX (Multiplex) FILTER switch**
   To turn on and off the multiplex filter.
9. **Noise reduction selector (NR OFF, DOLBY B and DOLBY C)**
   To select noise reduction for recording and playback purposes.
10. **REC LEVEL control**
    To set recording levels. The level adjustment is the same amount for both right and left channels.
11. **REC BALANCE control**
    To set the left and right channel balance of recording input levels.
12. **BIAS control**
    To set the recording bias current. The bias adjustment range is between −20% and +20% of the proper bias current of each tape position. If using a reference tape recommended for use with the cassette deck, set this control to the center click "0" position.
13. **PHONES LEVEL control**
    To adjust the output level of the PHONES jack.
14. **TIMER START Switch**
    For absentee recording and timed playback.
15. **PHONES jack**
    To listen through a pair of headphones, connect them to this jack.

## FL (Fluorescent) Display


FILTER, Dolby B and Dolby C Displays
Tape position Displays (NORM, CrO2 and METAL)
IPSS Display
A ⟷ B Display
Peak Level Meter and Recording level guide (Dots)
Digital Tape Counter and Program Number Display
Deck Mode Displays

# III. PRINCIPAL PARTS LOCATION

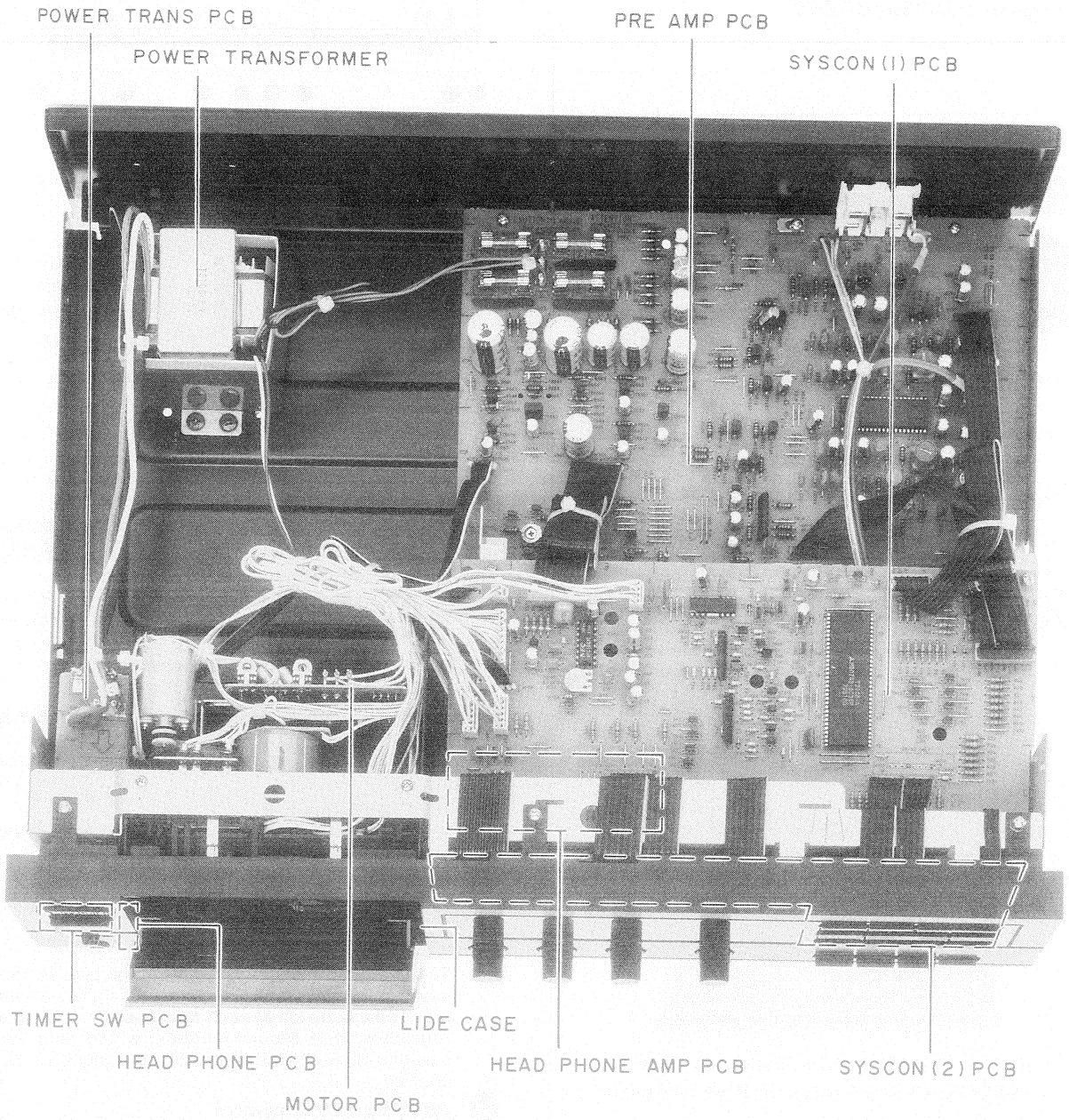



Fig.3-1. Top View

# III. PRINCIPAL PARTS LOCATION

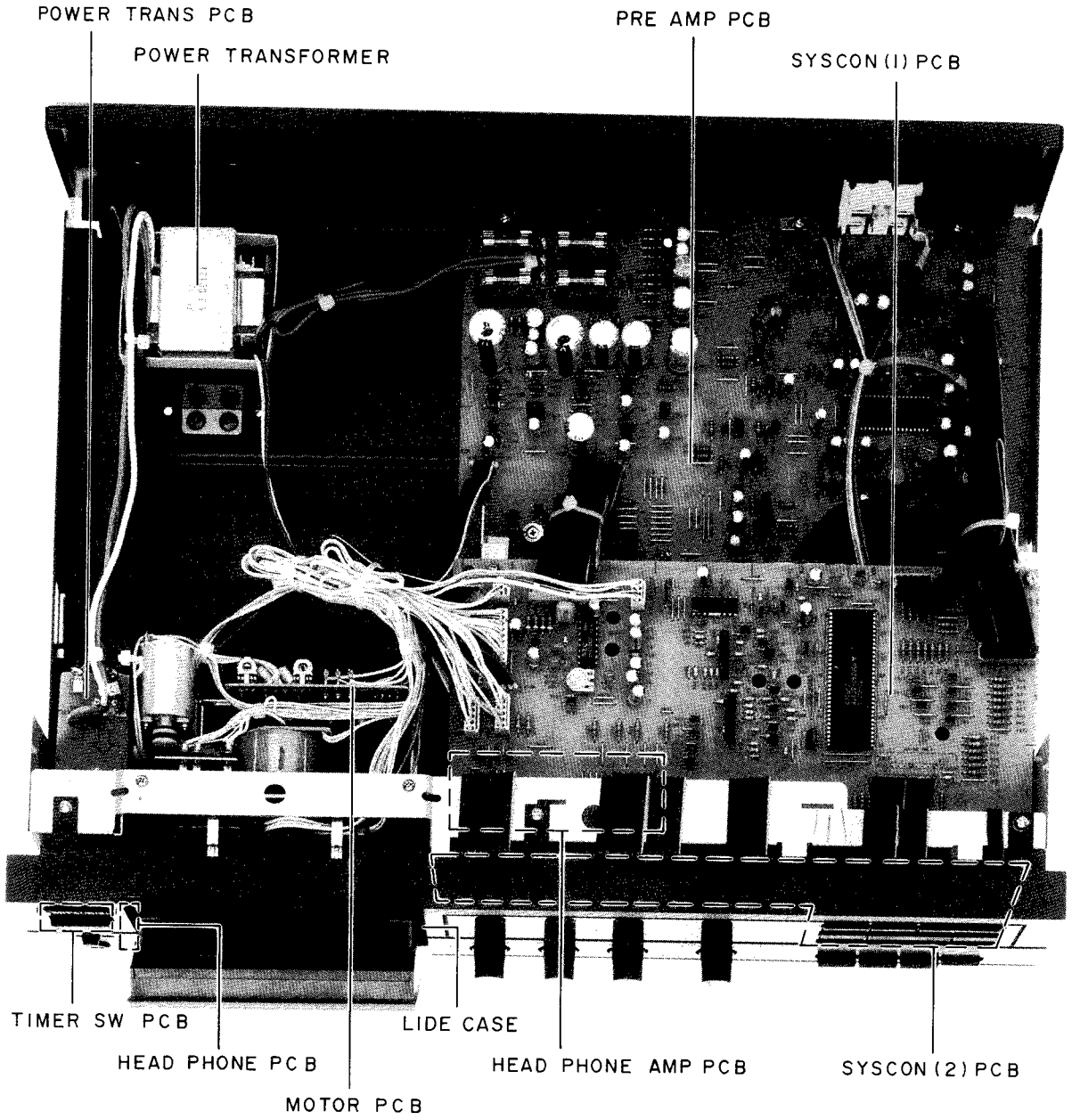



Fig.3-1. Top View

# IV. MECHANICAL ADJUSTMENT

4-1. PINCH ROLLER PRESSURE MEASUREMENT(Refer to Fig.4-1)
NOTE : Remove the LID CASE, before this measurement.

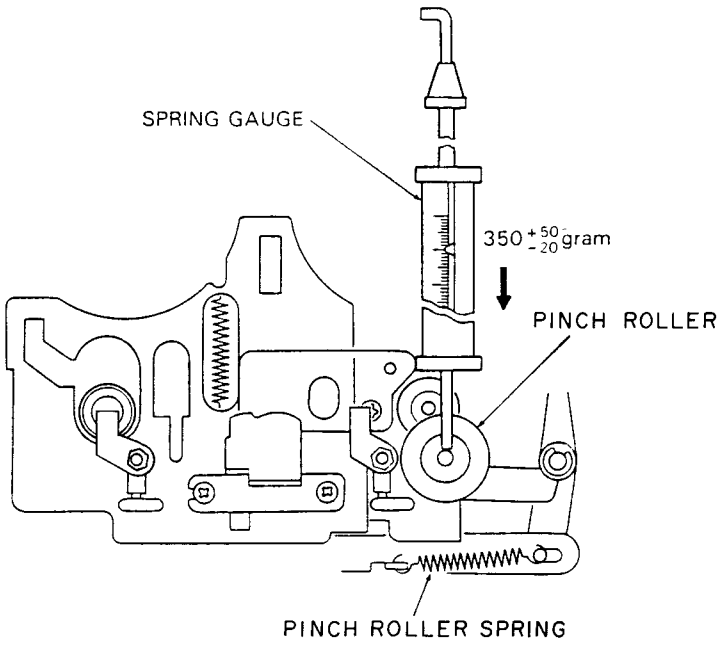



Fig.4-1.

Put in PLAY mode. Push pinch roller arm down with the spring gauge 1 or 2 mm from the capstan, then release slowly. Read the spring gauge at the moment the pinch roller touches the capstan and begins to rotate.

Specified pressure : 350 $^{+50}_{-20}$ gram.

If there is not the specified pressure obtained, replace the pinch roller spring.

4-2. WINDING TORQUE MEASUREMENT IN EACH MODE(Refer to Fig.4-2)

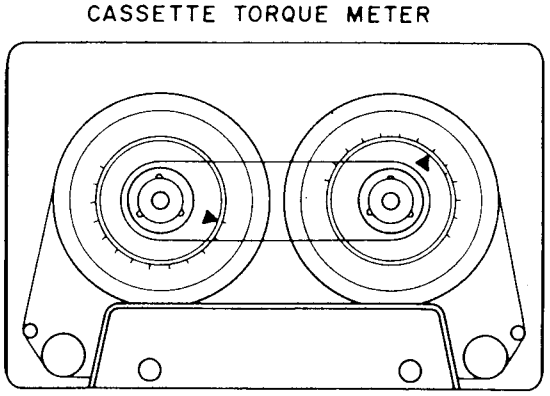



Fig.4-2.

Insert a cassette torque meter and measure in each mode. For First Forward and Rewind, measure at the end of the tape has stopped running.

PLAY mode
Take up Torque : 40 ±15 g – cm

Back Tension Torque : 10 ±5 g – cm

FIRST FORWARD, REWIND mode

Take up Torque : 120 $^{+130}_{-50}$ g–cm

## 4–3 HOW TO INSTALL VOLUME (VR901) AND CAM WHEEL

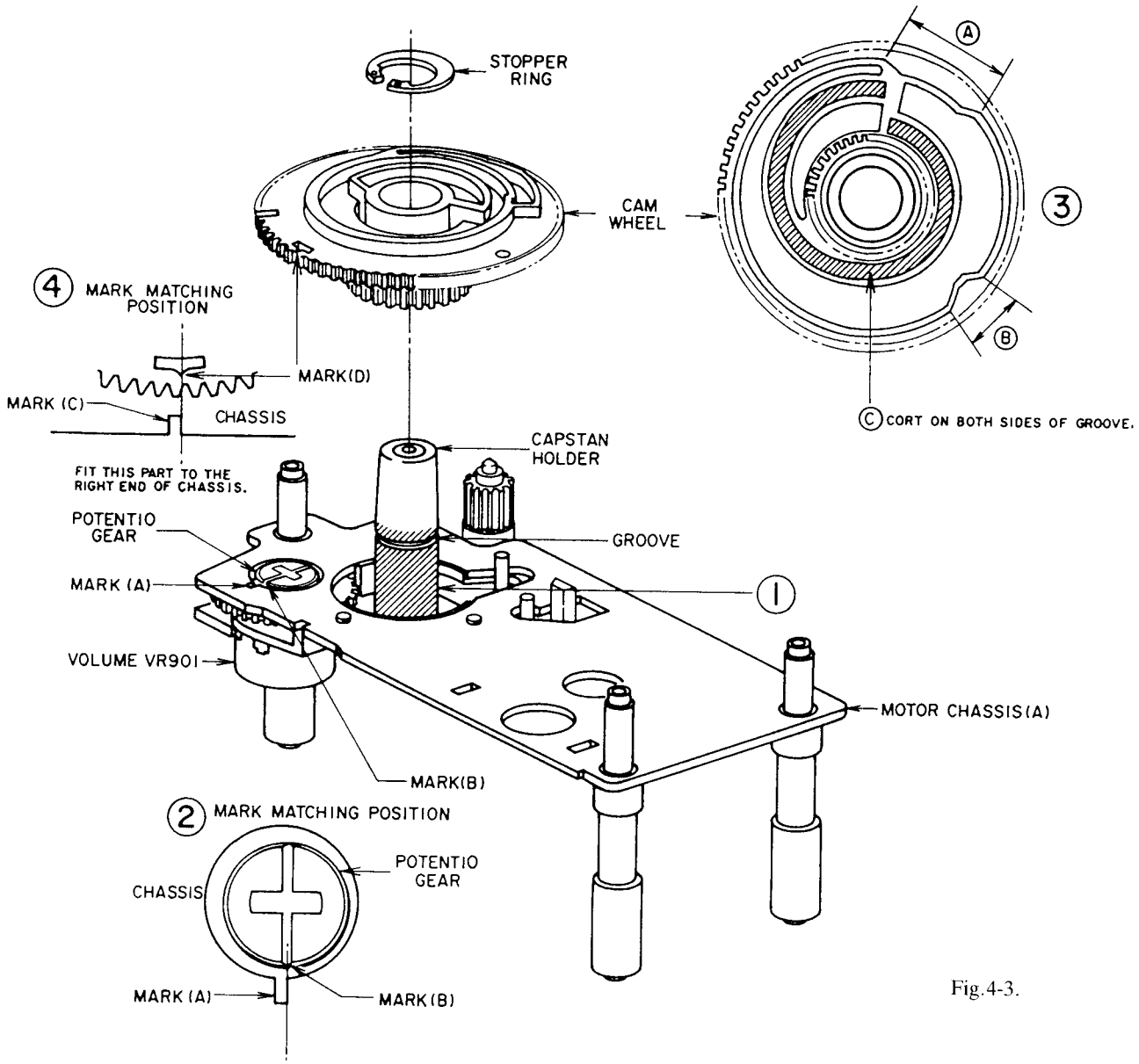



Fig.4-3.

1) Apply Molybdenum coat on the area of 360° from the bottom to the upside 2mm of groove as shown Fig. 4-3-①.
2) Fit the right end of Mark (A) to the center of Mark (B) as shown Fig. 4-3-②.
3) Apply Molybdenum coat on the Ⓐ, Ⓑ and Ⓒ shown Fig. 4-3-③.
4) Set the CAM WHEEL on the CAPSTAN HOLDER (ensure that the cam wheel and potentio gear in meshed properly).
   When the CAM WHEEL is set properly, fit the center of Mark (D) to the right end of Mark (C) as shown Fig. 4-3-④.
5) Fit the stopper ring in the groove of the capstan holder

**CAUTIONS:**

1. Make sure that the teeth on the periphery of cam wheel and the cam are absolutely free from any scratch, cut, etc.
2. Make sure that Molybdenum coat is applied on the specified area only.

4–4. POTENTIOMETER PRESET VOLTAGE ADJUSTMENT(Refer to fig.4–4 to 4–5)

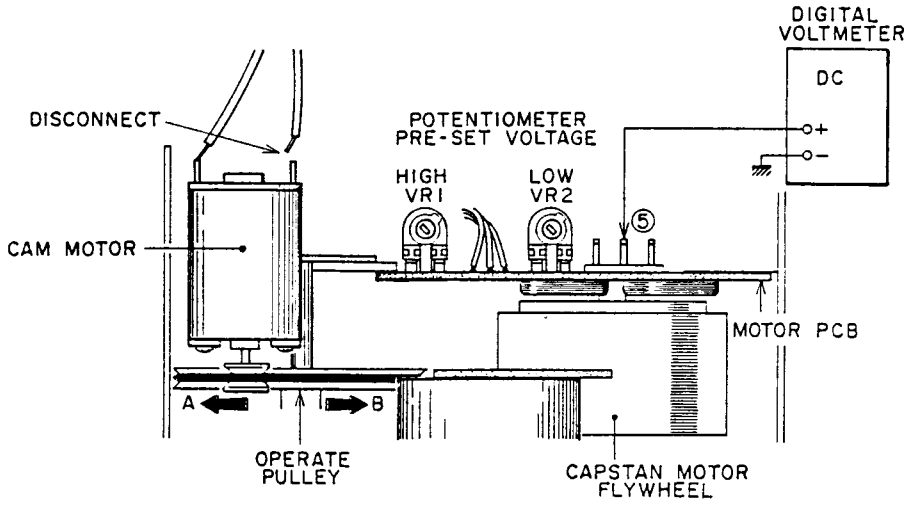



Fig.4-4.

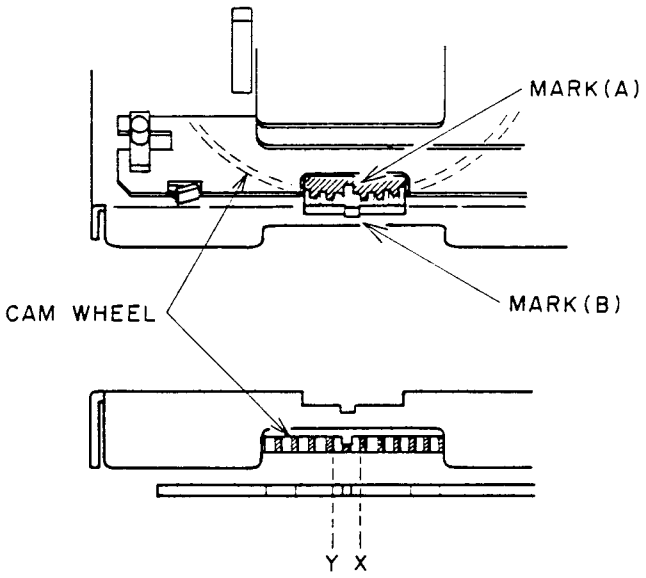



Fig.4-5.

1) LOW VOLTAGE ADJUSTMENT
   a. With power OFF, remove the connecting cord of the CAM MOTOR and turn the OPERATE PULLEY fully with your fingers in A direction. (EJECT DIRESTION)
   b. Connect the digital voltmeter as shown in Fig. 4-4.
   c. With power ON, adjust VR2 so that the reading voltage on the Digital DC Voltmeter is 1.15V (DC).
2) HIGH VOLTAGE ADJUSTMENT
   a. With power OFF, turn the OPERATE PULLEY fully with your fingers in B direction. (PLAY DIRECTION)
   b. With power ON, adjust VR1 so that reading voltage on the Digital DC Voltmeter is 9.08V (DC).
3) Repeart step 1) and 2).
4) With power OFF, connect the connecting cord of the CAM MOTOR.
5) Remove the Cassette lid, Front panel and Bottom cover. (Refer to 1. DISASSEMBLY)
6) a. Set to power ON.
   b. Adjust VR1 slightly so that the center of Marker (A) coincides with the center of Marker (B) (should be within the range between X and Y) at STOP Mode as shown on Fig. 4-5. (The marker (A) on the CAM WHEEL can be seen clearly by lighting it from the back.)
   c. Set the IPLS switch to ON.
   d. Confirm that head and pinch roller do not move up and down when the FF and REW buttons are alternately pressed.
   e. Tun the reel with fingers in STOP Mode to check that the brake works sufficiently.
   When the brake acts normally, the take-up reel does not turn clockwise while the supply reel does not rotate counterclockwise.

# V. HEAD AND TAPE GUIDE ADJUSTMENT

NOTES : 1. Be sure to clean the heads prior to head adjustment.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Be sure to demagnetize the heads with a Head Demagnetizer before and after head adjustment.

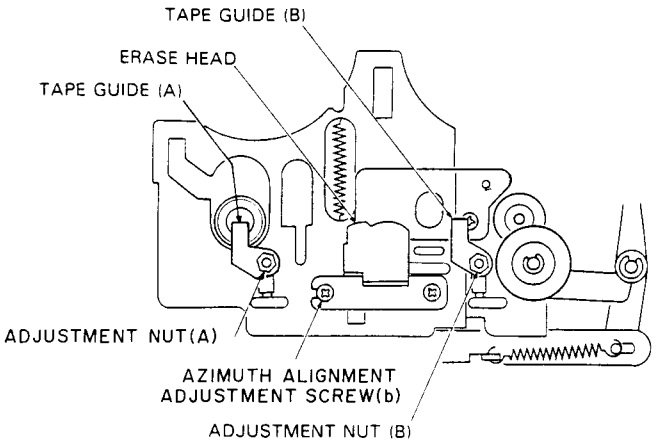



Fig.5-1.

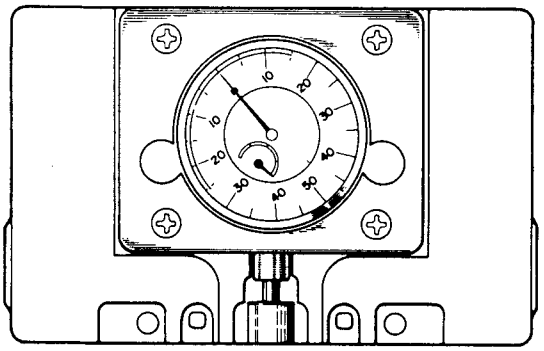


Fig. 5-3 Cassette Head Projection (M61AT751189)

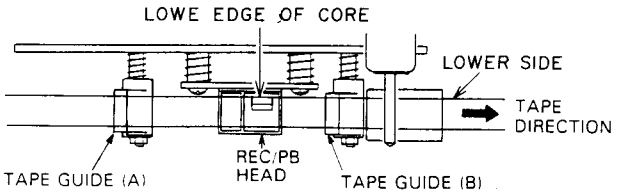



Fig.5-2.

## 5-1. REC/PB HEAD PROJECTION ADJSUTMENT

1) Remove the LID CASE.
2) Set the cassette head projection gauge (M61AT751180) and set to PLAY mode, and confirm so that the reading on the cassette head projection gauge is 3.4 ±0.3mm.
3) If the reading on the cassette head projection gauge is not obtained 3.4 ±0.3mm, put the screwdriver into the hole (a) on the HEAD BASE and slightly twist it and adjust so that the reading on the cassette head projection gauge is 3.4 ±0.3mm.
4) After adjustment, press the STOP button and set to PLAY mode again, confirm the reading on the cassette head projection gauge as well as 3.4 ±0.3mm, and set to the IPSS (music search) mode, confirm the reading on the cassette head projection gauge is 2.6 ±0.3mm (Refer to Fig. 5-1)

## 5-2. TAPE GUIDE HEIGHT ADJUSTMENT

1) Connect an AC milli-voltmeter to LINE OUT.
2) Set the mirror cassette tape and set to PLAY mode.
3) Adjust the TAPE GUIDE (A) and (B) by turning the ADJUSTMENT NUTS (A) and (B) so that the lower side of tape and lower edge of L channel core of the REC/PB HEAD is in alignment and tape runs smooth and tape is not hitched by the tape guides.
4) Playback a 4TR, 1000Hz head hight adjustment test tape (M61AT750775) and slightly adjust the ADJUSTMENT NUT (A) and (B) so that the line output level of both channels are at maximum.

## 5-3. REC/PB HEAD AZIMUTH ALIGNMENT ADJUSTMENT

1) Connect the AC milli-voltmeters to both channels of LINE OUT. and connect CH-1 and CH-2 of the oscilloscope to both output of AC milli-voltmeters.
2) Playback a 10kHz head azimuth alignment test tape (M61AT750778) and adjust the azimuth alignment adjustment screw (b) so that the waveforms on the oscilloscope are in the same phase at maximum output level.

NOTE : For best result, repeat step 4) in 5-2 TAPE GUIDE HEIGHT ADJUSTMENT and 5-3 REC/PB HEAD AZIMUTH ALIGNMENT ADJUSTMENT for several times.

# VI. ELECTRICAL ADJUSTMENT

**EXAMPLE**

| STEP | ADJUSTMENT ITEM |
|---|---|
| 1. | TEST TAPE, SUPPLY SIGNAL |
| 2. | MODE |
| 3. | ADJUSTMENT PARTS |
| 4. | RESULT/REMARKS |

Test Point

Adjustment part

| 11 | MPX FILTER |
|---|---|
| 1. | 19kHz, –6.0dBm |
| 2. | REC PAUSE |
| 3. | FL201 (Lch), FL201b (Rch) |
| 4. | Minimum level of millivolt Meter, MPX, SW ON |

| 2 | METER SENSITIVITY (0VU) |
|---|---|
| 1. | 1 kHz,<br>Set the OSC output control, so that the LINE OUT PUT level is –6.0dBm. |
| 2. | REC PAUSE |
| 3. | LEVEL METER ON the FRONT PANEL, VR201 (Lch), VR201b (Rch) |
| 4. | 0VU segment on the LEVEL METER is lit.<br>* See Note 2. |

| 1 | TAPE SPEED |
|---|---|
| 1. | 3150 Hz Test tape (M61AT751263) |
| 2. | PB |
| 3. | LINE OUT, VR1 |
| 4. | • Connect a frequency counter to LINE OUT.<br>3150 ±5Hz |

| 9 | METAL POSITION FREQUENCY RESPONSE |
|---|---|
| 1. | METAL blank tape, 1kHz, 10kHz, –26.0dBm. |
| 2. | REC/PB |
| 3. | LINE OUT, VR402 |
| 4. | • Connect an AC milli-voltmeter to LINE OUT.<br>–26.0 ±0.3dBm (1kHz, 10kHz)<br>* See Note 2, 3. |

| 8 | $CrO_2$ POSITION FREQUENCY RESPONSE |
|---|---|
| 1. | $CrO_2$ blank tape, 1kHz, 10kHz, –26.0dBm |
| 2. | REC/PB |
| 3. | LINE OUT, VR401 |
| 4. | • Connect an AC milli-voltmeter to LINE OUT.<br>–26.0 ±0.3dBm (1kHz, 10kHz)<br>* See Note 2, 3. |

| 6 | BIAS DIP POINT |
|---|---|
| 1. | NORMAL blank tape. |
| 2. | REC |
| 3. | LINE OUT, T402 |
| 4. | • Connect a Digital DC voltmeter between TP1 (+), and TP2 (–). Minimum level.<br>* Before this adjustment, set VR403 and VR403b as shown below. |

SYS-CON PCB

VR1 TAPE SPEED

IC I

FRONT

Fig 6-2

Lch VR201 Rch VR201b METER LEVEL

FL201

M.P.X. FILTER

FL201b

VR402 METAL BIAS

VR401 $CrO_2$ BIAS

VR403 NOR BIAS Lch Rch

R403b

T401 100KHz OSC

P401

TP1

TP2

T402

T402b

Lch VR102 VR101

PB LEVEL

10KHz LEVEL

VR102b VR101b Rch

Lch VR301

REC LEVEL

Rch VR301b

PRE AMP PCB

| 4 | 10kHz PB LEVEL |
|---|---|
| 1. | 10kHz Test tape (M61AT750778) |
| 2. | PB |
| 3. | LINE OUT, VR101 (Lch), VR101b (Rch) |
| 4. | • Connect an AC milli-voltmeter to LINE OUT.<br>–21.0 ±0.2dBm |

| 10 | REC LEVEL |
|---|---|
| 1. | NORMAL blank tape, 315Hz, –6.0dBm. |
| 2. | REC/PB |
| 3. | LINE OUT, VR310 (Lch), VR301b (Rch) |
| 4. | • Connect an AC milli-voltmeter to LINE OUT.<br>–6.0 ±0.2dBm<br>* See Note 2, 3. |

| 7 | NORMAL POSITION FREQUENCY RESPONSE |
|---|---|
| 1. | NORMAL blank tape, 1kHz, 10kHz, –26.0dBm. |
| 2. | REC/PB |
| 3. | LINE OUT, VR403 (Lch), VR403b (Rch) |
| 4. | • Connect an AC milli-voltmeter to LINE OUT.<br>–26.0 ±0.3dBm (1kHz, 10kHz)<br>* See Note 2, 3 |

| 5 | BIAS FREQUENCY |
|---|---|
| 1. | METAL blank tape. |
| 2. | REC |
| 3. | P401 pin ①, T401 |
| 4. | • Connect a frequency counter between connector P401 ① and GND.<br>100 k ±0.1 kHz |

| 3 | PB LEVEL |
|---|---|
| 1. | 315 Hz Test tape M61AT750773 |
| 2. | PB |
| 3. | LINE OUT, VR102 (Lch), VR102b (Rch) |
| 4. | • Connect an AC milli-voltmeter to LINE OUT.<br>–6.0 ±0.3dBm |

Fig 6-1

NOTES
1. All adjustments are without DOLBY, dbx, and MPX FILTER.
2. Controls Setting:
   Output volume: Max, Rec balance: Center click position.
   Rec level volume: Max, Bias Adj. volume: Center click position.
3. Use the following cassette measuring tape:

| | | | |
|---|---|---|---|
| NORMAL TAPE | : MAXELL | UDI | C–60 |
| $CrO_2$ tape | : TDK | SA | C–60 |
| METAL TAPE | : TDK | MA | C–60 |

# VII. PARTS LIST

**WARNING**

**⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.**

**AVERTISSEMENT**

**⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.**

## 1. MECHA BLOCK

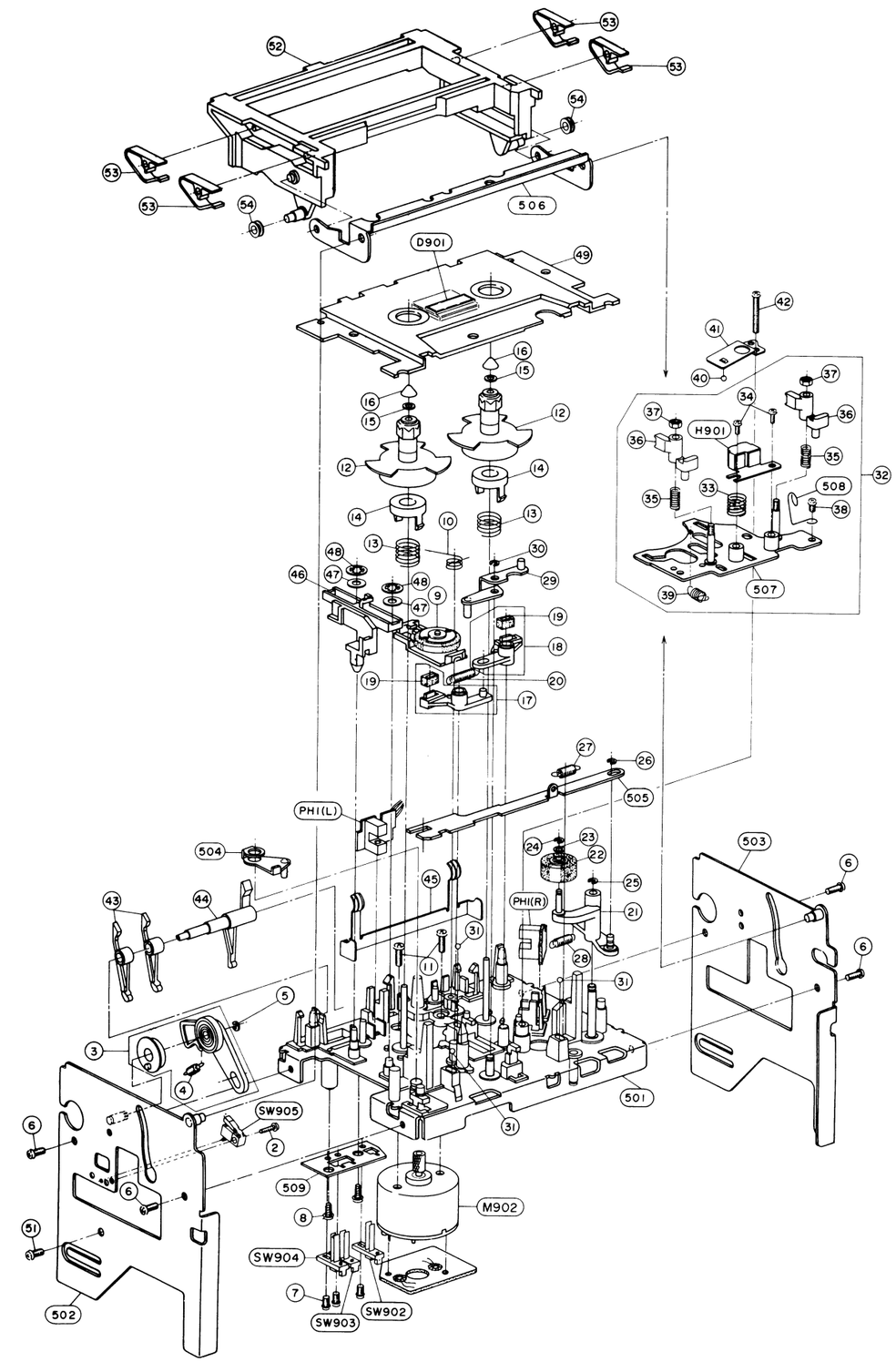
| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | | MECHA BLK M-T7100 |
| 2 | M61ZS608106 | PAN20X06STL CMT |
| 3 | M62T2030A110C | OIL CLUTCH BLK |
| 4 | M61ZG341970 | SP PULL OIL CLUTCH |
| 5 | M61ZW270088 | RING E190SUP CMT |
| 6 | M61ZS201275 | ST PAN26X06STL CMT |
| SW905 | M61ES372912 | SW LEAF SPPB21 01-2 [LOADING SW] |
| PH1(R) | M61ET345091 | DETECTOR SPI-201-40 B,C [DETECTOR-R PCB] |
| PH1(L) | M61ET345091 | DETECTOR SPI-201-40 B,C [DETECTOR-L PCB] |
| SW902 | M61ES336990 | SW LEAF BSW-169 01-1 NO [CRO2/METAL] |
| SW903 | M61ES336990 | SW LEAF BSW-169 01-1 NO [120U/70U] |
| SW904 | M61ES336990 | SW LEAF BSW-169 01-1 NO [ANTI REC] |
| 7 | M61ZS464703 | BID20X04STL CMT |
| 8 | M61ZS336614 | PT PAN26X08STL CMT |
| 9 | M61TC336605 | WIND IDLER ASSY |
| 10 | M61ZG336140 | SP TORSION IDLER |
| M902 | M61BMB336989 | MOTOR REEL (PULLEY) PART [REEL MOTOR] |
| 11 | M61ZS550708 | PAN26X08STL NI3 |
| 12 | M62T2069A360A | REEL TABLE BLK |
| 13 | M61ZG336141 | SP PUSH BT |
| 14 | M61TC336142 | HOLDER BT SP |
| 15 | M61ZW330073 | PW21X040X020 TOUGH LIGHT NO440 |
| 16 | M61MT305793 | REEL CAP |
| 17 | M62T2030A160A | LEVER BRAKE (A) BLK |
| 18 | M62T2030A170A | LEVER BRAKE (B) BLK |
| 19 | M61TC336146 | BRAKE RUBBER |
| 20 | M61ZG312946 | SP T1-03.2/0.29-16.0 T1-062 |
| 21 | M61BLB336150 | ARM PINCH ROLLER (A) PART |
| 22 | M61MP346329 | PINCH ROLLER(C) |
| 23 | M61ZW305546 | PW21X040X025P$L |
| 24 | M61ZW356657 | RING E150SUP CMT |
| 25 | M61ZW270088 | RING E190SUP CMT |
| 26 | M61ZW270088 | RING E190SUP CMT |
| 27 | M61ZG342575 | SP PULL PINCH ROLLER (T-2) |
| 28 | M61ZG321534 | SP T2-03.2/0.29-12.5 T2-060 |
| 29 | M61BLB336155 | ARM HEAD SLIDE PART |
| 30 | M61ZW270088 | RING E190SUP CMT |
| 31 | M61MV357208 | BALL 200STL |
| 32 | M62T2100A030A | HEAD BLK |
| 33 | M61ZG373323 | SP PUSH HEAD |
| H901 | M62H2505A010A | HEAD COMB EPR4-13TG |
| 34 | M61ZS201508 | PAN20X04STL NI3 |
| 35 | M61ZG336130B | SP PUSH GUIDE B |
| 36 | M61HZ336129 | GUIDE TAPE |
| 37 | M61ZW373137 | N20STL BNI 1 |
| 38 | M61ZS391386 | PAN23X03STL NI3 |
| 39 | M61ZG341972 | SP PULL HEAD RETURN |
| 40 | M61MV357208 | BALL 200STL |

| Ref. No. | Part No. | Description |
|---|---|---|
| 41 | M61ZG336157 | SP PLATE HEAD HOLD |
| 42 | M61ZS308931 | PAN26X18STL CMT |
| 43 | M61ML336158 | LEVER DETECTION (B) |
| 44 | M61ML336159J2 | LEVER DETECTOR(A) |
| 45 | M61ZG336160 | SP PLATE CASSETTE HOLDER (A) |
| 46 | M61TC336161 | SLIDE EJECT |
| 47 | M61ZW306464 | PW31X070X050STL CMT |
| 48 | M61ZW329422 | RING CS 0300 |
| 49 | M62336162B-A | LID DECORATION (B) |
| D901 | M61ED337010 | D LED SLF-201C GREEN [HOUSING LAMP PCB] |
| 50 | M61ZS479474 | PAN26X05STL CMT |
| 51 | M61ZS201275 | ST PAN26X06STL CMT |
| 52 | M61SP336163B | LID CASE(2) |
| 53 | M61ZG336615 | SP PLATE CASSETTE HOLDER (B) |
| 54 | M61SZ336166 | COLLAR LID |

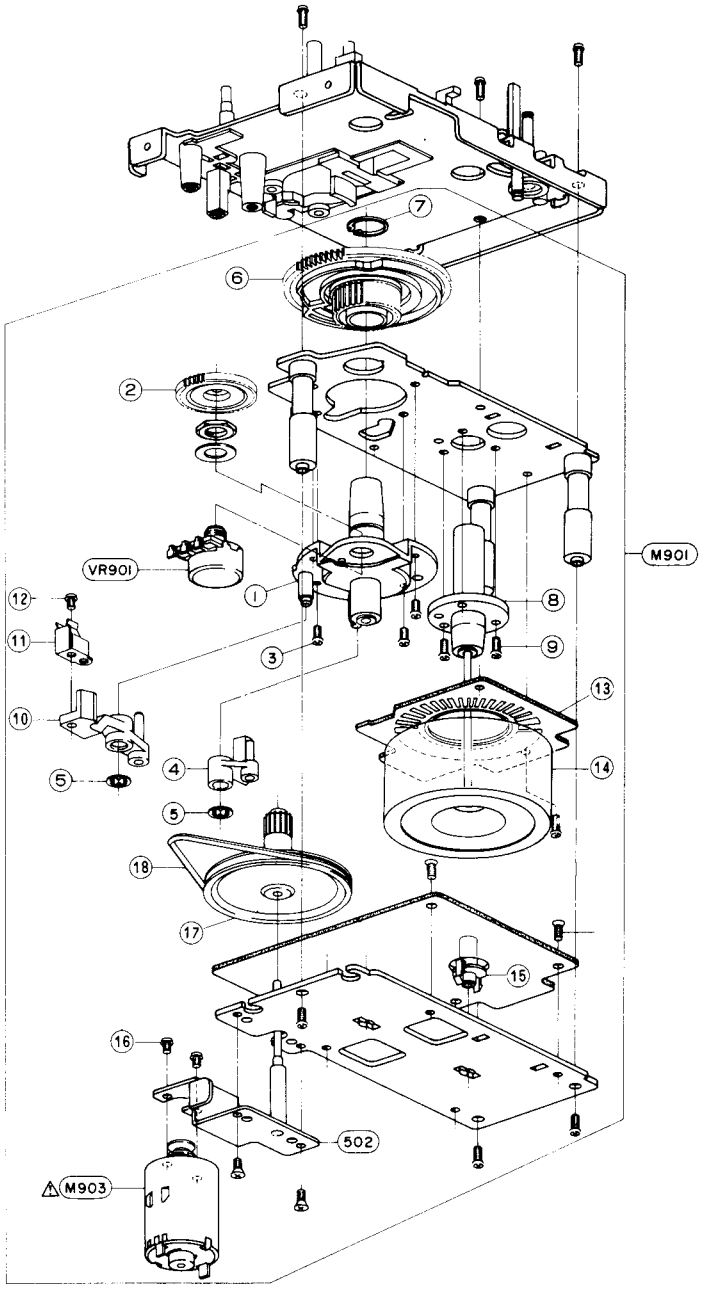
NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.



**MECHA BLOCK**



**MOTOR BLM-300 BLOCK**




## 2. MOTOR BLM-300 BLOCK

| Ref. No. | Part No. | Description |
|---|---|---|
| M901 | M62M3103A010A | MOTOR BLM-300 [CAPSTAN MOTOR] |
| 1 | M61TCB336004A | HOLDER CAPSTAN (C-1) PART |
| VR901 | M61EV337052 | VR ROTARY 16L10XOR B103 |
| 2 | M61MZ336005 | GEAR POTENTION |
| 3 | M61ZS432843 | PAN26X04STL CMT |
| 4 | M61BLB336007 | LEVER BRAKE CAM PART |
| 5 | M61ZW653163 | RING CS 280STL PKR |
| 6 | M61MZ336006 | CAM WHEEL |
| 7 | M61ZW336604 | RETAINING RING O S930SUP ACP |
| 8 | M61TC336002 | HOLDER CAPSTAN (B) |
| 9 | M61ZS479474 | PAN26X05STL CMT |
| 10 | M61BLB336009 | LEVER EJECT CAM PART |
| 11 | M61MZ353158 | SP PLATE EJECT |
| 12 | M61ZS477876 | PAN20X03STL CMT |
| 13 | M61EA336012 | PC FG |

| Ref. No. | Part No. | Description |
|---|---|---|
| 14 | M61BFB336013 | FLYWHEEL PART |
| 15 | M61TC336016 | HOLDER THRUST (A) |
| M903 | M61BMB345196 | MOTOR OPERATION (PULLEY) PART [CAM MOTOR] |
| 16 | M61ZS592378 | PAN26X03STL CMT |
| 17 | M61MR336019 | PULLEY OPERATE |
| 18 | M61MB336021 | BELT OPERATION |

NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

## 3. PRE-AMP P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D101 | M07060320 | D SILICON H 1S2473 |
| D501 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D502 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D503 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D504 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D505 | M07060320 | D SILICON H 1S2473 |
| D506 | M61ED373390 | D LED LTZ-R15 RED F10 |
| D507 | M61ED346540 | D ZENER H HZ9B1L |
| D508 | M07060320 | D SILICON H 1S2473 |
| D509 | M61ED373390 | D LED LTZ-R15 RED F10 |
| D510 | M61ED346540 | D ZENER H HZ9B1L |
| D511 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D512 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D513 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D514 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D515 | M07060320 | D SILICON H 1S2473 |
| D516 | M61ED346550 | D ZENER H HZ11B2L |
| D517 | M07060320 | D SILICON H 1S2473 |
| D518 | M61ED346550 | D ZENER H HZ11B2L |
| D519 | M61ED346538 | D ZENER H HZ9A2L |
| D520 | M61ED346538 | D ZENER H HZ9A2L |
| D521 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D522 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D523 | M61ED324014 | D ZENER H HZ11 B1 |
| D541 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D542 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D543 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D544 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D552 | M61ED324014 | D ZENER H HZ11 B1 |
| D553 | M61ED324014 | D ZENER H HZ11 B1 |
| D554 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D555 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D556 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D557 | M61ED306010 | D ZENER H HZ6 A2 |
| D558 | M07A01327 | D ZENER H HZ6 B2 |
| D559 | M07060320 | D SILICON H 1S2473 |
| D560 | M61ED346624 | D ZENER H HZ30 2 |
| D561 | M61ED324013 | D ZENER H HZ20 2 |
| D562 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D563 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D564 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D565 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D566 | *M61ED330622 | D SILICON 1SR35A-100 100/1.0A |
| D601 | M07060320 | D SILICON H 1S2473 |
| D602 | M07060320 | D SILICON H 1S2473 |
| FL101 | M61EH368105 | FILTER EMI STY103NB |
| FL201 | M61EH372101 | FILTER DB 42B-5162-04 |
| FL202 | M61EO323982 | COIL TUN 1 100Z-431 100.00KHZ |
| FL203 | M61EH368105 | FILTER EMI STY103NB |
| FL204 | M61EH368105 | FILTER EMI STY103NB |
| FL205 | M61EH368105 | FILTER EMI STY103NB |
| FR401 | *M61ER200972 | R FUSE H S10 ERD2FC 1/4W 33R0G |
| FR501 | *M61ER200926 | R FUSE H S10 ERD2FC 1/4W 27R0G |
| FR502 | *M61ER367642 | R FUSE H S10 ERD2FC 1/4W 1200G |
| IC101 | M61EI348785 | IC M5220L |
| IC201 | M61EI359985 | IC CX20187 |
| IC301 | M61EI346071 | IC M5218L-21 |
| IC401 | M61EI373383 | IC UPC1297CA |
| IC601 | M04172315 | IC M51143AL |
| J601 | M61EJ336905 | PIN J AJC-035-ACB P 4P |
| L201 | M61EO372996 | COIL FIX 1 RC875 223J |
| L301 | M61EO357050 | COIL FIX 1 RC875 822J |
| L302 | M61EO369999 | COIL VARI 1 79-5249-13 5.89MH |
| RL101 | M61EQ328529 | RELAY LEAD LAB2NS 2NO 12V |
| TR101 | M61ET349081 | TR 2SC3383 S,T |
| TR102 | M61ET349081 | TR 2SC3383 S,T |
| TR103 | M61ET349081 | TR 2SC3383 S,T |
| TR104 | M61ET373485 | TR DTC123JS |
| TR105 | M61ET354365 | TR DTC114YS |
| TR106 | M61ET354365 | TR DTC114YS |
| TR201 | M61ET349081 | TR 2SC3383 S,T |
| TR202 | M61ET349081 | TR 2SC3383 S,T |
| TR203 | M61ET349081 | TR 2SC3383 S,T |
| TR301 | M61ET349081 | TR 2SC3383 S,T |
| TR302 | M61ET349081 | TR 2SC3383 S,T |
| TR303 | M61ET349081 | TR 2SC3383 S,T |
| TR304 | M61ET349081 | TR 2SC3383 S,T |
| TR305 | M61ET349081 | TR 2SC3383 S,T |
| TR306 | M61ET349081 | TR 2SC3383 S,T |
| TR307 | M61ET349081 | TR 2SC3383 S,T |
| TR401 | *M61ET365394 | TR 2SC3242A E,F,G F05 |
| TR402 | M61ET373391 | TR DTC143ZS |
| TR403 | M61ET370310 | TR DTC144TS |
| TR404 | M61ET370310 | TR DTC144TS |
| TR405 | M61ET308977 | TR 2SC2274K F F05 |
| TR406 | M61ET308977 | TR 2SC2274K F F05 |
| TR407 | M07B01301 | TR 2SA1115 E,F,G F05 |
| TR408 | M61ET373392 | TR DTC124XS |
| TR409 | M61ET370310 | TR DTC144TS |
| TR410 | M61ET370310 | TR DTC144TS |
| TR411 | M61ET354415 | TR DTA144ES |
| TR501 | *M61ET349081 | TR 2SC3383 S,T |
| TR502 | M61ET352726 | TR 2SA1392 T,U |
| TR503 | *M61ET352726 | TR 2SA1392 T,U |
| TR504 | M61ET349081 | TR 2SC3383 S,T |
| TR505 | *M61ET349081 | M61TR 2SC3383 S,T |
| TR506 | *M61ET349081 | TR 2SC3383 S,T |
| TR507 | *M61ET349081 | TR 2SC3383 S,T |
| TR508 | *M61ET352726 | TR 2SA1392 T,U |
| TR509 | *M61ET352726 | TR 2SA1392 T,U |
| TR510 | *M61ET352726 | TR 2SA1392 T,U |
| TR511 | *M61ET365394 | TR 2SC3242A E,F,G F05 |
| TR551 | *M61ET365394 | TR 2SC3242A E,F,G F05 |
| TR552 | *M61ET354841 | TR 2SA1282A F,G F05 |
| TR553 | *M04207305 | TR 2SD1189 Q,R |
| TR554 | *M07B01305 | TR 2SC2603 G F05 |
| TR555 | *M07B01301 | TR 2SA1115 E,F,G F05 |
| TR556 | *M07B01305 | TR 2SC2603 G F05 |
| TR557 | *M61ET365394 | TR 2SC3242A E,F,G F05 |
| TR601 | M61ET354415 | TR DTA144ES |
| TR602 | M61ET354415 | TR DTA144ES |
| TR603 | M61ET354415 | TR DTA144ES |
| T401 | M61EO373384 | COIL OSC 1 23D6-01 100.0KHZ |
| T402 | M61EO373483 | COIL OSC 1 23D6-02 100.0KHZ |
| VR101 | M61EV356582 | R S-FIX H RH0615C 0.10W 473 |
| VR102 | M61EV356577 | R S-FIX H RH0615C 0.10W 103 |
| VR201 | M61EV357619 | R S-FIX H RH0615C 0.10W 104 |
| VR301 | M61EV357619 | R S-FIX H RH0615C 0.10W 104 |
| VR401 | M61EV345781 | R S-FIX H RVF8P01 0.10W 202 |
| VR402 | M61EV337996 | R S-FIX H RVF8P01 0.10W 104 |
| VR403 | M61EV337996 | R S-FIX H RVF8P01 0.10W 104 |
| F1 | *M61EF593706 | FUSE SEMKO T 250V 500MA |
| F2 | *M61EF593706 | FUSE SEMKO T 250V 500MA |
| F3 | *M61EF601942 | FUSE SEMKO T 250V 630MA |
| F4 | *M61EF601942 | FUSE SEMKO T 250V 630MA |

## 4. HEADPHONE AMP P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| IC701 | M61EI353227 | IC M5216L |
| VR701 | M61EV373387 | VR ROTARY RK16312A0 A104X2 [REC LEVEL] |
| VR702 | M61EV373385 | VR ROTARY RK1631210 M104 N104 [REC BALANCE] |
| VR703 | M61EV373388 | VR ROTARY RK16312A0 A104X2 [PHONES LEVEL] |
| VR704 | M61EV373389 | VR ROTARY RK1631110 B102 [BIAS ADJUST] |

## 5. POWER TRANS P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| C801 | *M61EC338411 | C CE V FZ 103P 400AC |
| FL801 | M61EO368465 | COIL LF LF4N |
| SW801 | *M61ES371104 | SW PUSH SDDLD1082A 01-1 [POWER SW] |

## 6. HEADPHONE P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| J701 | M61EJ369995 | PHONE J 3P HLJ0540-410 GP 6.3 [PHONES] |

## 7. SYSTEM CONTROL (1) P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | M61ED307572 | D SILICON H 1SS131 |
| D2 | M61ED307572 | D SILICON H 1SS131 |
| D3 | M61ED307572 | D SILICON H 1SS131 |
| D4 | M61ED307572 | D SILICON H 1SS131 |
| D5 | M61ED307572 | D SILICON H 1SS131 |
| D6 | M61ED346593 | D ZENER H HZ3 B1 |
| D7 | M61ED338332 | D ZENER H HZ4 A2 |
| D8 | M61ED316389 | D ZENER H HZ11 A2 |
| D9 | M61ED346609 | D ZENER H HZ9 C1 |
| D10 | M61ED307572 | D SILICON H 1SS131 |
| D11 | M61ED346604 | D ZENER H HZ7 B2 |
| D12 | M61ED307572 | D SILICON H 1SS131 |
| D13 | M61ED307572 | D SILICON H 1SS131 |
| D14 | M61ED307572 | D SILICON H 1SS131 |
| D15 | M61ED307572 | D SILICON H 1SS131 |
| D16 | M61ED307572 | D SILICON H 1SS131 |
| D17 | M61ED307572 | D SILICON H 1SS131 |
| D18 | M61ED307572 | D SILICON H 1SS131 |
| IC1 | M61EI379211 | IC M50743-603SP T2100-A CUSTOM |
| IC2 | M61EI336992 | IC UPC1043C |
| IC3 | M61EI346071 | IC M5218L-21 |
| IC4 | M61EI346071 | IC M5218L-21 |
| IC5 | M61EI355602 | IC LB1649 |
| TR1 | M61ET354414 | TR DTC144ES |
| TR2 | M61ET354414 | TR DTC144ES |
| TR3 | M61ET353897 | TR DTC114ES |
| TR4 | M61ET353897 | TR DTC114ES |
| TR5 | M61ET353897 | TR DTC114ES |
| TR6 | M61ET353897 | TR DTC114ES |
| TR7 | M61ET353897 | TR DTC114ES |
| TR8 | M61ET353897 | TR DTC114ES |
| TR9 | M61ET353897 | TR DTC114ES |
| TR10 | M61ET353897 | TR DTC114ES |
| TR11 | M61ET353897 | TR DTC114ES |
| TR12 | M61ET353897 | TR DTC114ES |
| TR13 | M61ET353897 | TR DTC114ES |
| TR14 | M07B01305 | TR 2SC2603 G F05 |
| TR15 | M07454303 | TR 2SD1012-V G F05 |
| TR16 | M07454303 | TR 2SD1012-V G F05 |
| TR17 | M07454303 | TR 2SD1012-V G F05 |
| TR18 | M07454303 | TR 2SD1012-V G F05 |
| TR19 | M07454303 | TR 2SD1012-V G F05 |
| TR20 | M61ET354415 | TR DTA144ES |
| TR21 | M07B01305 | TR 2SC2603 G F05 |
| TR22 | M61ET353897 | TR DTC114ES |
| TR23 | M61ET353897 | TR DTC114ES |
| TR24 | M61ET353897 | TR DTC114ES |
| TR25 | M07B01305 | TR 2SC2603 G F05 |
| TR26 | M07B01305 | TR 2SC2603 G F05 |
| TR27 | M61ET354414 | TR DTC144ES |
| TR28 | M61ET354414 | TR DTC144ES |
| TR29 | M61ET354414 | TR DTC114ES |
| TR30 | M07B01301 | TR 2SA1115 E,F,G F05 |
| TR31 | M61ET373382 | TR DTA143ZS |
| TR32 | M61ET353897 | TR DTC114ES |
| TR33 | M61ET353897 | TR DTC114ES |
| TR34 | M61ET353897 | TR DTC114ES |
| TR35 | M61ET353897 | TR DTC114ES |
| TR36 | M61ET353897 | TR DTC114ES |
| TR37 | M61ET353897 | TR DTC114ES |
| VR1 | M61EV330531 | R S-FIX H TM8KV2-1S 0.50W503 |
| X1 | M61EI372031 | OSC CE W/C FCR8.0MC 8.0MHZ |

## 8. SYSTEM CONTROL (2) P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D201 | M07060320 | D SILICON H 1S2473 |
| D202 | M07060320 | D SILICON H 1S2473 |
| D203 | M61ED307572 | D SILICON H 1SS131 |
| D204 | M07060320 | D SILICON H 1S2473 |
| D205 | M07060320 | D SILICON H 1S2473 |
| IC201 | M61EI345765 | IC LB1292 |
| IC202 | M61EI345765 | IC LB1292 |
| IC203 | M61EI337013 | IC LB1290 |
| IC204 | M61EI356327 | IC HA12067NT |
| IN201 | M61EM373136 | IND FL FIP26AW15Y |
| SW201 | M61ES373380 | SW PUSH ESB-68630 4 THROW N [NR SW] |
| TR201 | M61ET360824 | TR DTC144EF |
| TR202 | M61ET360824 | TR DTC144EF |
| TR203 | M61ET372030 | TR DTA144EF |
| TR204 | M61ET372030 | TR DTA144EF |
| TR205 | M61ET360824 | TR DTC144EF |
| TR206 | M61ET360824 | TR DTC144EF |
| TS201 | M61ES373381 | SW TACT SKHHPP |
| TS202 | M61ES373381 | SW TACT SKHHPP |
| TS203 | M61ES373381 | SW TACT SKHHPP |
| TS204 | M61ES373381 | SW TACT SKHHPP |
| TS205 | M61ES373381 | SW TACT SKHHPP |
| TS206 | M61ES373381 | SW TACT SKHHPP |
| TS207 | M61ES373381 | SW TACT SKHHPP |
| TS208 | M61ES373381 | SW TACT SKHHPP |
| TS209 | M61ES373381 | SW TACT SKHHPP |
| TS210 | M61ES373381 | SW TACT SKHHPP |

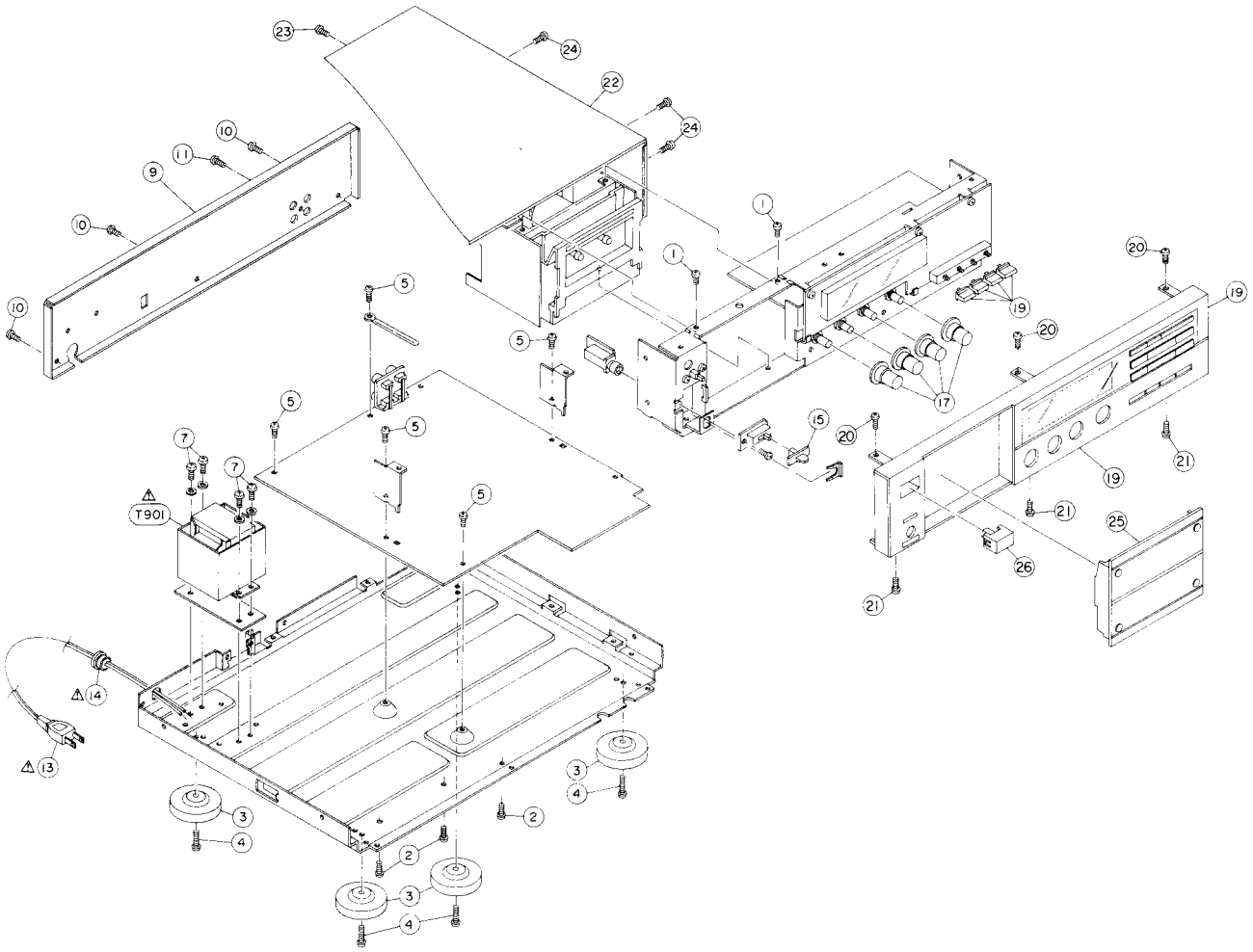
## 9. TIMER SW P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| SW301 | M61ES370965 | SW SLIDE SSSU02 1-01-03N [TIMER START] |

## 10. MOTOR P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D5 | M61ED338561 | D ZENER H HZ2B2FA F10 |
| IC1 | M61EI201940 | IC NJM4558S |
| IC2 | M61EI201940 | IC NJM4558S |
| IC3 | M61EI337568 | HOLE-E HE04MH07FAC |
| IC4 | M61EI337568 | HOLE-E HE04MH07FAC |
| TR1 | M61ET308977 | TR 2SC2274K F F05 |
| TR2 | M61ET337760 | TR 2SA984K F |
| TR3 | M61ET308977 | TR 2SC2274K F F05 |
| TR4 | M61ET337760 | TR 2SA984K F |
| VR1 | M61EV464253 | R S-FIX V V8K1-1 0.10W 202 |
| VR2 | M61EV464253 | R S-FIX V V8K1-1 0.10W 202 |

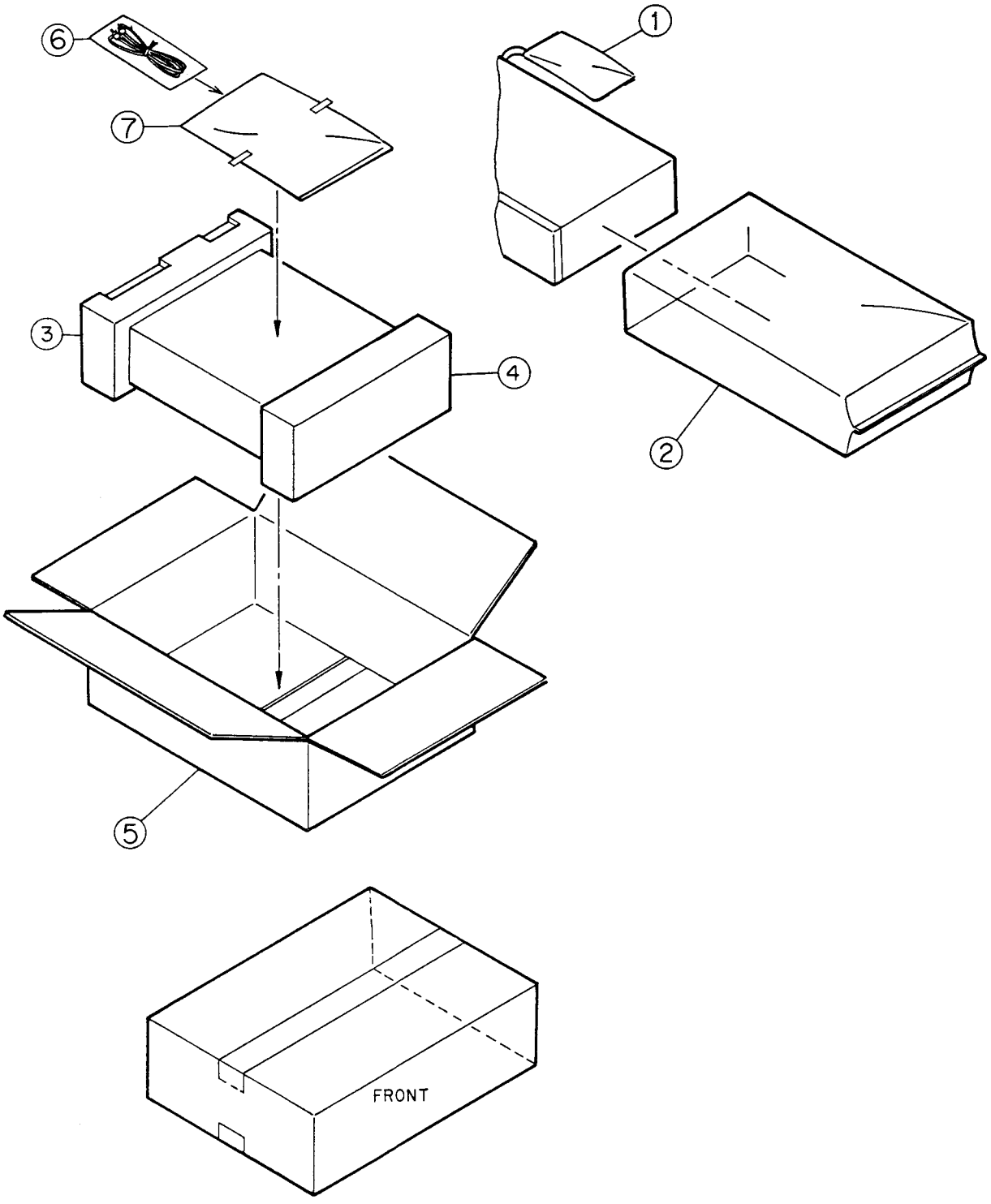
**FINAL ASSEMBLY BLOCK**




## 11. FINAL ASSEMBLY BLOCK

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | M61ZS361242 | ST BR26X06STL CMT |
| 2 | M61ZS345272 | ST BR30X06STL BNI |
| 3 | M61SA380828J | FOOT(M) |
| 4 | M61ZS351098 | ST BR30X12STL BNI |
| 5 | M61ZS342001 | ST BR30X06STL NI3 |
| T901 | *M61BT373396 | TRANS POWER T2100(E,V) |
| 7 | M61ZS322580 | ST BID40X08STL BNI |
| 9 | M61SP377350J | PANEL REAR M-T7100(EU) |
| 9 | M61SP382760J | PANEL REAR M-T7100(WG) |
| 10 | M61ZS345272 | ST BR30X06STL BNI |
| 11 | M61ZS350934 | PT BR30X08STL BNI |
| 13 | *M61EW363667 | AC CORD 200 0364 LCFL B300 A E |
| 14 | *M61EZ330775 | CLAMPER CORD 130 |
| 15 | M61SK358066B | KNOB SLIDE-BLACK [TIMER START] |
| 17 | M61SK377351J | KNOB VR(M) B |
| 18 | M61SK373340A | KNOB PUSH-BLACK |
| 19 | M62T2100A060D | PANEL FRONT BLK M-T7100 |
| 20 | M61ZS320906 | ST BR30X06STL CMT |
| 21 | M61ZS305827 | ST BID30X06STL BNI |
| 22 | M61SP373343A | COVER UPPER-BLACK |
| 23 | M61ZS345272 | ST BR30X06STL BNI |
| 24 | M61ZS341960 | ST BID40X06STL BNI |
| 25 | M61BDT2100A070D | LID PANEL BLK M-T7100 |
| 26 | M61SK380850J | KNOB POW(M) B |

PACKING




## 12. PACKING

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | M61ZZ357922 | POLY BAG 0090X0250XR05-S |
| 2 | M61ZZ300569 | POLY COVER |
| 3 | M61ZZ370277 | PACKING (R) |
| 4 | M61ZZ370278-A | PACKING (L) |
| 5 | M61ZZ377359J | CARTON CASE M-T7100 |
| 6 | M61EW344151 | CORD RR-61A PINX2-PINX2 |
| 7 | M61ZZ377360J | O/M SET M-T7100(EU)RED |

# ABBREVIATIONS FOR SERVICE MANUAL (CASSETTE)

| Abbreviation | Explanation | Abbreviation | Explanation |
|---|---|---|---|
| AC | Alternating Current | MIN | MINute |
| A/D | Analog/Digital | MML | Maximum Modulation Level |
| AF | Auto Fader | MOL | Maximum Output Level |
| AMP | AMPlifier | MPX | Multi PleX |
| AR | Anti Recording | NC | Not Connected (No Connection) |
| AT BIAS | Auto Tuning BIAS | NFB | Negative Feed Back |
| ATT | ATTenuator | NORM | NORMal |
| BAL | BALance | NR | Noise Reduction |
| BEF | Band Elimination Filter | OSC | OSCillator (OSCillation) |
| BSS | Blank Search System | P | Pulse |
| CAP M | CAPsTan Motor | PB | Play Back |
| CH | CHannel | QMSS | Quick Memory Search System |
| COMP | COMParator | QR | Quick Reverse |
| CONT | CONTinuance | R CH | Right CHannel |
| CRLP | Computer Recording Level Processing | REC | RECord (RECording) |
| CS | Chip Select | REV | REVerse |
| D/A | Digital/Analog | ROT | ROTation |
| DC | Direct Current | REW | REWind |
| DET | DETector | SEC | SECond |
| DISCRI | DISCRIminator | SELE | SELEctor |
| DUB | DUBbing | SENS | SENSitivity |
| EQ | EQualizer | SEPP | Single Ended Push Pull |
| FF (or F.FWD) | Fast Forward | SIG | SIGnal |
| FLD | FLuorescent Display | SPECT | SPECTrum |
| FREQ | FREQuency | STD | STanDard |
| FWD | ForWarD | SW | SWitch |
| GND | GrouND | SYSCON | SYStem CONtrol |
| H | High | TP | Test Point |
| HPF | High Pass Filter | TRIG | TRIGa |
| IND | INDicator | VCA | Voltage Control Attenuator |
| IPLS | Instant Program Location System | VOL | VOLume |
| | | VOLT | VOLTage |
| L | Low | VR | Variable Resistor |
| L CH | Left CHannel | X'TAL | cysTAL |
| LED | Light Emitining Diode | X1 | Normal speed |
| MEMO | MEMOry | X2 | Dubble speed |
| MICOM | MIcroCOMputer | | |

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE MITSUBISHI DENKI BLDG MARUNOUCHI TOKYO 100 TELEX J24532 CABLE MELCO TOKYO

M-T7100
M61AM726078J
Printed in Japan

MITSUBISHI
AUDIO SYSTEMS

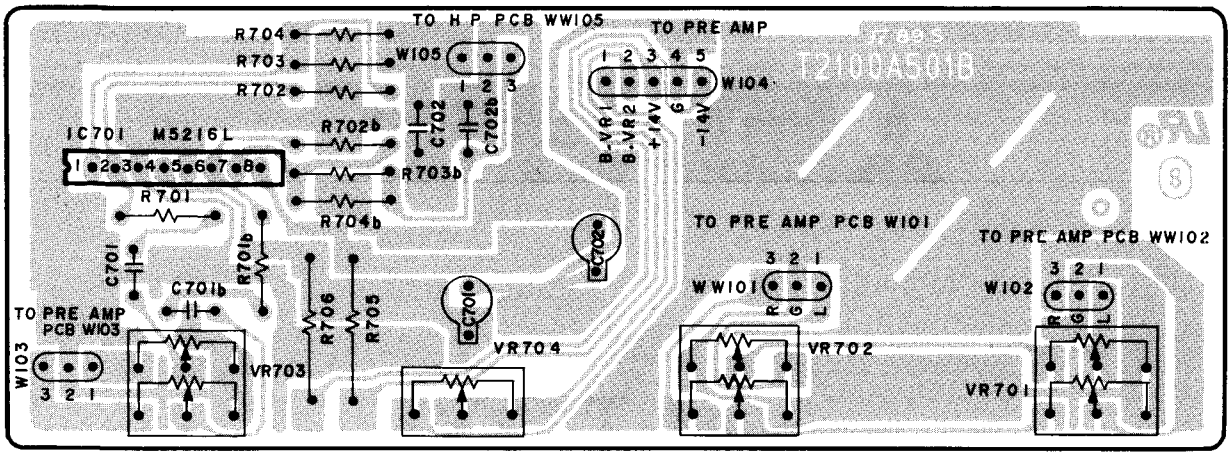
# MODEL M-T7100

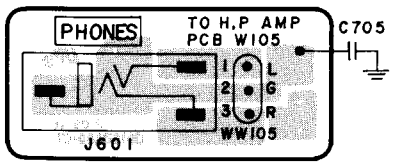
# SCHEMATIC DIAGRAM AND PC BOARDS

TABLE OF CONTENTS

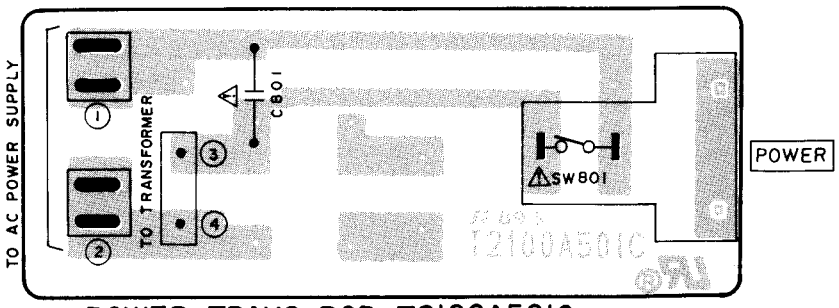

1. OTHER PC BOARDS ..... 2
2. CONNECTION DIAGRAM ..... 3
3. SYSTEM CONTROL SCHEMATIC DIAGRAM ..... 4
4. SYSTEM CONTROL (1) PC BOARD,
SYSTEM CONTROL (2) PC BOARD, AND MOTOR PC BOARD ... 5
5. PRE AMP SCHEMATIC DIAGRAM ..... 6
6. PRE AMP PC BOARD ..... 7
7. BLOCK DIAGRAM ..... 8

## HEAD PHONE AMP PCB T2100A501B

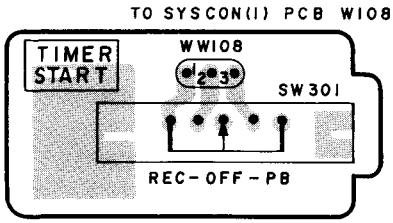



HEAD PHONE PCB
T2100A501D




POWER TRANS PCB T2100A501C




TIMER SW PCB
T2100A502C

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

POTENTION PCB
M3103C726B

VR901 10K(B)

MOTOR PCB
M3103C726A

GND
+9.8V
VR
GND
H.IN
-14V
-14V

M901
CAPSTAN MOTOR
BLM-500

FG PCB
M3103C7130

FG

HEAD PHONE PCB
T2100A501D

J701

WW105
L
G
R

C705
0.01/25(N)

WW101
VR702
REC
BALANCE
VR702
100K(MN)
VR702
100K(MN)

R703
150
R704
180
W105
C702
0.022
C702b
R704b
R703b

IC 701
M5216L

HEAD PHONE PCB

W101

Lch
LINE IN
Rch

Lch
LINE OUT
Rch

J601

W202
+19V
+32V

SYSTEM CONTROL (2) PCB
T2100A502B

WW105
GND
MEMORY
IPSS
AUTO MUTE
REC
REW
FF
PLAY
STOP
COUNTER RESET
WW106

W106
COUNTER RESET
STOP
PLAY
FF
REW
REC
AUTO MUTE
IPSS
MEMORY
GND
W105

P5
FG
FG
GND
H.IN
-14V
+14V
GND
VR
+9.8V

J3
+19V
+32V

WW107
B
C
MPX

W107
B
C
MPX

WW102
SEG.d
SEG.e
DIG.2
SEG.g
SEG.f
DIG.3
SEG.h
DIG.4

W102
SEG.d
SEG.e
DIG.2
SEG.g
SEG.f
DIG.3
SEG.h
DIG.4

WW104
REW
PLAY
FF
MB
MA
IPSS
REC

W104
REW
PLAY
FF
MB
MA
IPSS
REC

WW101
AC5V
AC5V
+19V
+32V
GND
SEG.a
SEG.b
SEG.c
DIG.1

W101
AC5V
AC5V
+19V
+32V
GND
SEG.a
SEG.b
SEG.c
DIG.1

METAL
Cro2
NORMAL
METER(L)
GND
METER(R)
WW103

METAL
Cro2
NORMAL
METER(L)
GND
METER(R)
W103

GND
VEE
P6

REV
FWD
L→H
H→L
P1

M903
CAM MOTOR
RF-285

B(POWER SUPPLY) LINE

REC SIGNAL LINE

P.B SIGNAL LINE

D901
SLF-601C

HOUSING LAMP

M902
RF-510T-1800
REEL MOTOR

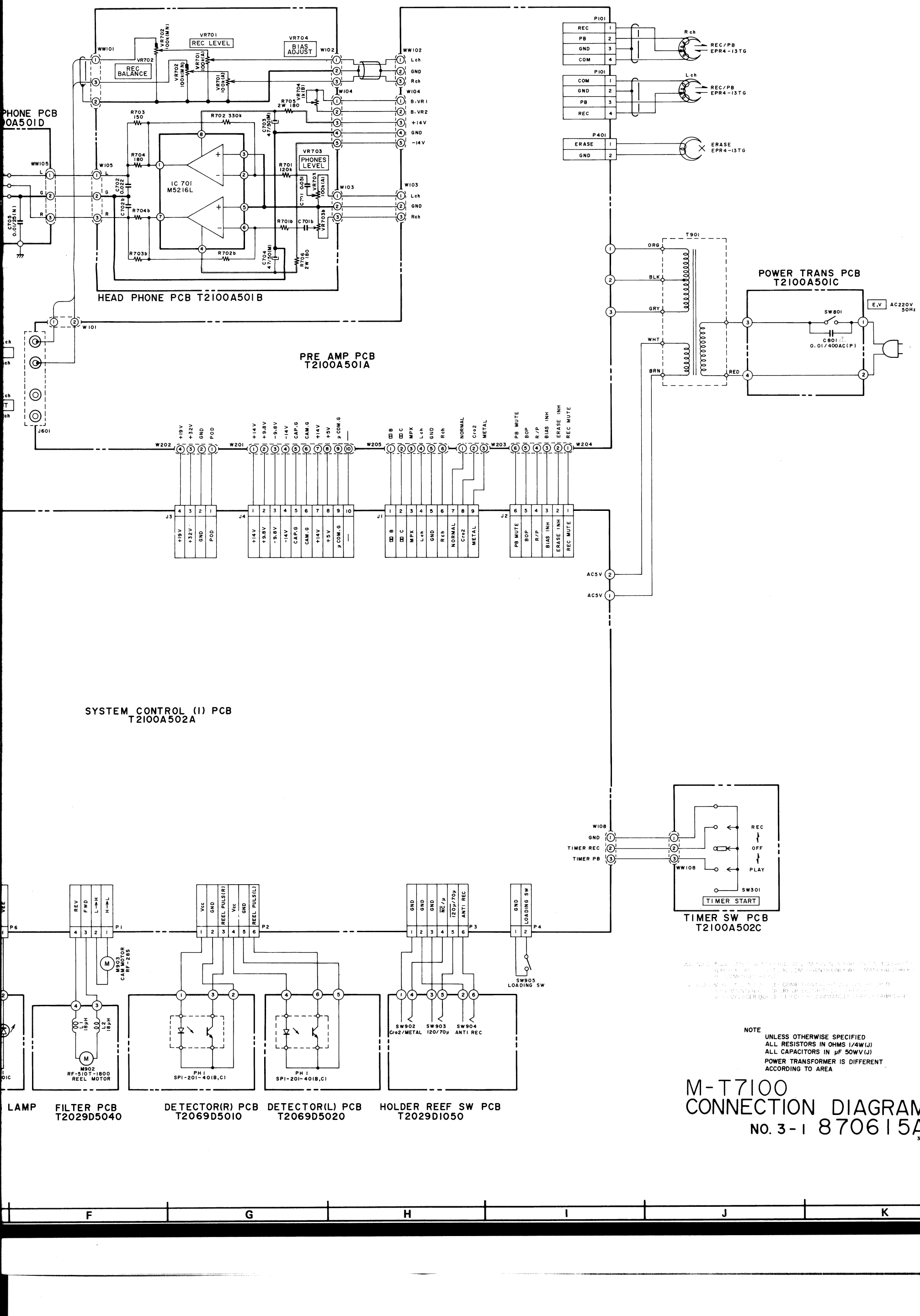
L1
18μH
L2
18μH

FILTER PCB
T2029D5040

SYSTEM CONTROL (1
T2100A502A

DETECT
T206

PH
SPI-201-4



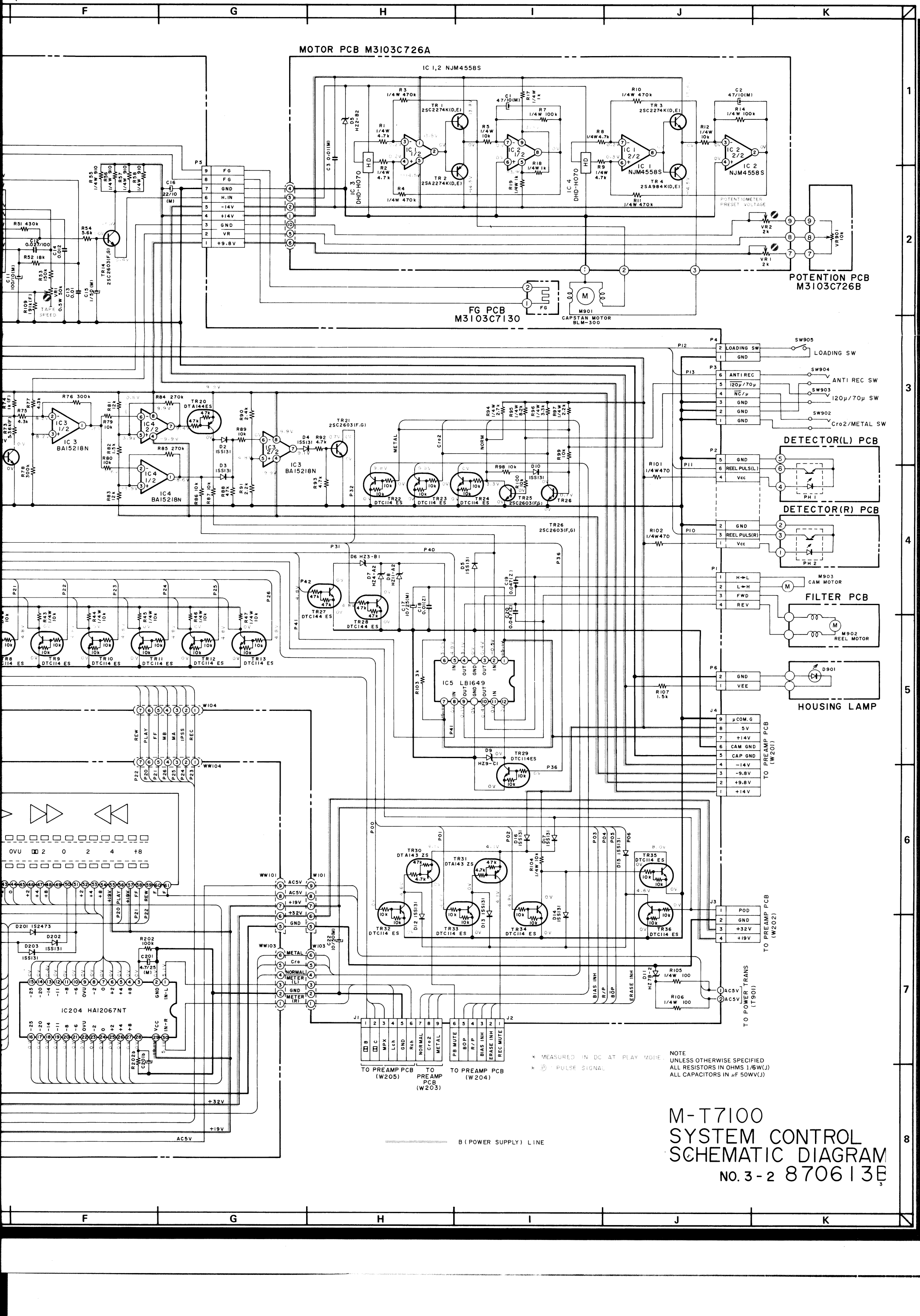

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA

# M-T7100 CONNECTION DIAGRAM NO. 3-1 870615A

SYSTEM CONTROL (1) PCB T2100A502A




SYSTEM CONTROL(2) PCB T2100A502B


MOTOR PCB M3103C726A
IC 1,2 NJM4558S
IC 3 DHD-H070
IC 4 DHD-H070
IC 1 NJM4558S
IC 2 NJM4558S
POTENTIOMETER PRESET VOLTAGE
VR2 2k
VR1 2k
VR901 10k
POTENTION PCB M3103C726B
FG PCB M3103C7130
FG
M901 CAPSTAN MOTOR BLM-300
P5
9 FG
8 FG
7 GND
6 H.IN
5 -14V
4 +14V
3 GND
2 VR
1 +9.8V
TAPE SPEED
IC 3 BA15218N
IC 4 BA15218N
IC5 LB1649
IC204 HAI2067NT
P4
2 LOADING SW
1 GND
SW905
LOADING SW
P3
6 ANTI REC
5 120μ/70μ
4 NC/μ
3 GND
2 GND
1 GND
SW904
ANTI REC SW
SW903
120μ/70μ SW
SW902
Cro2/METAL SW
DETECTOR(L) PCB
P2
5 GND
6 REEL PULS(L)
4 Vcc
PH 1
DETECTOR(R) PCB
2 GND
3 REEL PULS(R)
1 Vcc
PH 2
P1
1 H→L
2 L→H
3 FWD
4 REV
M903 CAM MOTOR
FILTER PCB
M902 REEL MOTOR
P6
2 GND
1 VEE
D901
HOUSING LAMP
J4
9 μCOM.G
8 5V
7 +14V
6 CAM GND
5 CAP GND
4 -14V
3 -9.8V
2 +9.8V
1 +14V
TO PREAMP PCB (W201)
J3
1 POD
2 GND
3 +32V
4 +19V
TO PREAMP PCB (W202)
TO POWER TRANS (T901)
1 AC5V
2 AC5V
J1
1 B
2 C
3 MPX
4 Lch
5 GND
6 Rch
7 NORMAL
8 Cro2
9 METAL
TO PREAMP PCB (W205)
TO PREAMP PCB (W203)
J2
6 PB MUTE
5 BOP
4 R/P
3 BIAS INH
2 ERASE INH
1 REC MUTE
TO PREAMP PCB (W204)
W104
WW104
REW PLAY FF MB MA IPSS REC
WW101
W101
AC5V
+19V
+32V
GND
WW103
W103
METAL
Cro
NORMAL (L)
METER (L)
GND
METER (R)
+32V
+19V
AC5V
OVU
* MEASURED IN DC AT PLAY MODE.
* PULSE SIGNAL
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
B (POWER SUPPLY) LINE
M-T7100
SYSTEM CONTROL
SCHEMATIC DIAGRAM
NO. 3-2 870613E3

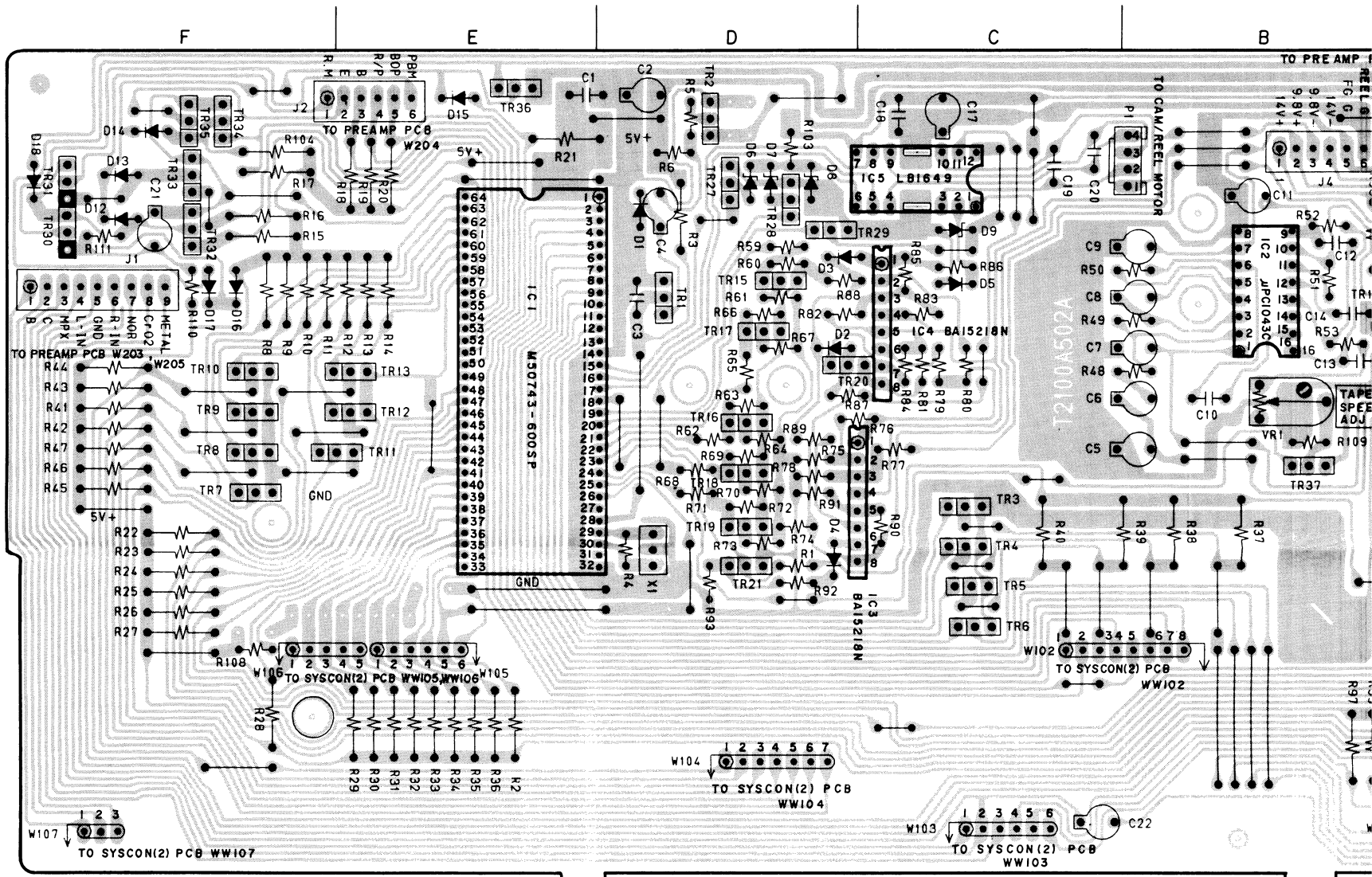
LOCATION OF COMPONENTS

IC
IC1 . . . . . E2
IC2 . . . . . B1
IC3 . . . . . D2
IC4 . . . . . C2
IC5 . . . . . C1

TRANSISTOR
TR1. . . . . D2
TR2. . . . . D1
TR3. . . . . C2
TR4. . . . . C2
TR5. . . . . C3
TR6. . . . . C3
TR7. . . . . F2
TR8. . . . . F2
TR9. . . . . F2
TR10. . . . F2
TR11. . . . E2
TR12. . . . E2
TR13. . . . E2
TR14. . . . A1
TR15. . . . D1
TR16. . . . D2
TR17. . . . D2
TR18. . . . D2
TR19. . . . D2
TR20. . . . D2
TR21. . . . D2
TR22. . . . A3
TR23. . . . A3
TR24. . . . A3
TR25. . . . A3
TR26. . . . A3
TR27. . . . D1
TR28. . . . D1
TR29. . . . D1
TR30. . . . F1
TR31. . . . F1
TR32. . . . F1
TR33. . . . F1
TR34. . . . F1
TR35. . . . F1
TR36. . . . F1
TR37. . . . B2

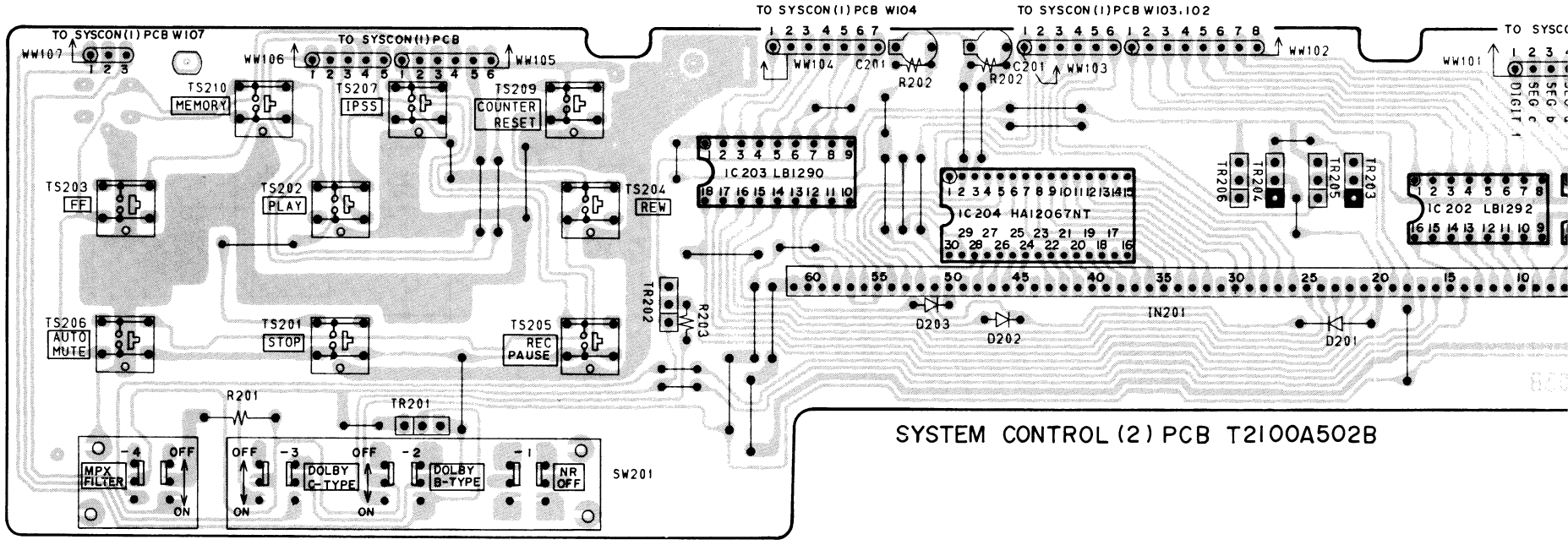
CONNECTOR
W101. . . . A3 P1---- B1
W102. . . . B3 P2---- A2
W103. . . . C3 P3---- A2
W104. . . . D3 P4---- A2
W105. . . . E3 P5---- A1
W106. . . . F3
W107. . . . F3
W108. . . . A2
J1. . . . . F2
J2. . . . . F1

2SC2603. . TR14, TR21, TR25, TR26
2SD1012. . TR15, TR16, TR17, TR18, TR19
DTC144 . . TR1, TR2, TR20, TR27, TR28
DTC114 . . TR3, TR4, TR5, TR6, TR7, TR8, TR9, TR10, TR11, TR12, TR13, TR22, TR23, TR24, TR29, TR32, TR33, TR34, TR35, TR36, TR37
DTA143 . . TR30, TR31




SYSTEM CONTROL (1) PCB T2100A502A

B
= NPN TRANSISTOR
B
= PNP TRANSISTOR




SYSTEM CONTROL (2) PCB T2100A502B

LDCATION OF COMPONENTs

ICs
IC201....A1
IC202....A1
IC203....D1
IC204....C1

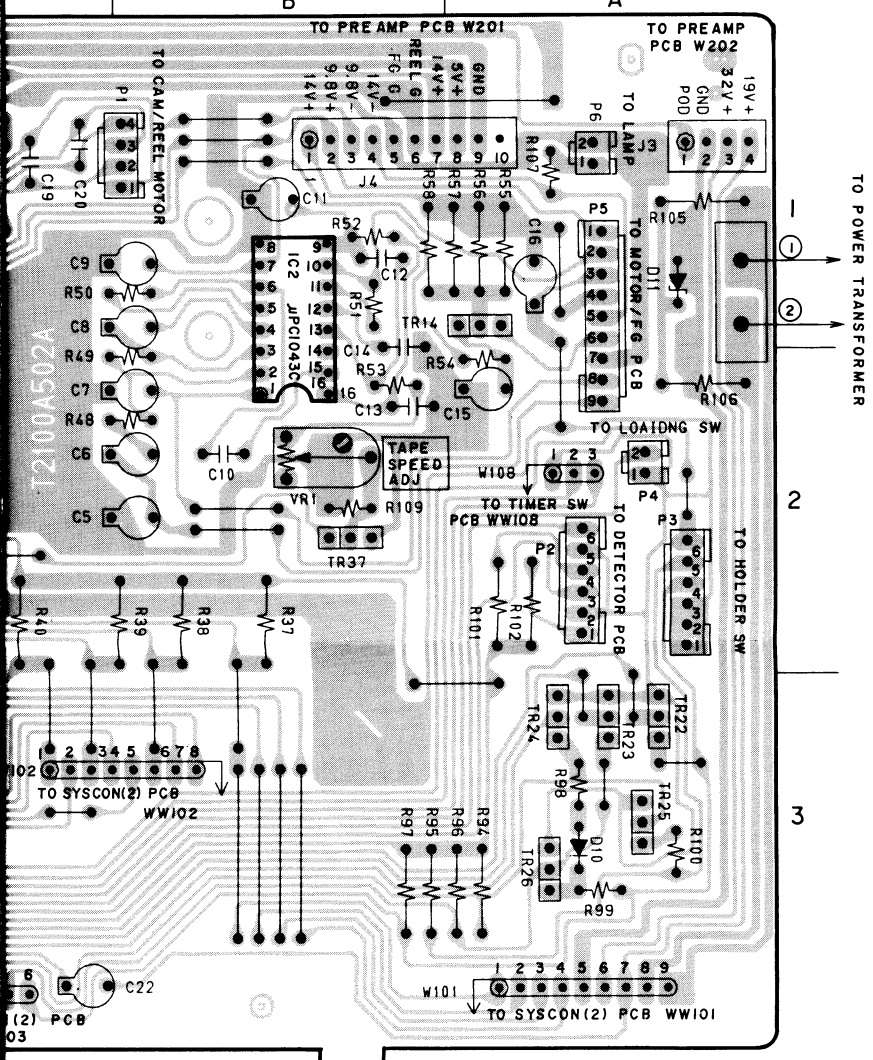
TRANSISTORs
TR201....E2
TR202....D2
TR203....B1
TR204....B1
TR205....B1
TR206....B1

CONNECTORs
WW101....A1
WW102....B1
WW103....C1
WW104....D1
WW105....E1
WW106....F1
WW107....F1

DTC144....TR201,TR202,TR205 TR206
DTA144....TR203,TR204

B C E
= NPN TRANSISTOR
B C E
= PNP TRANSISTOR

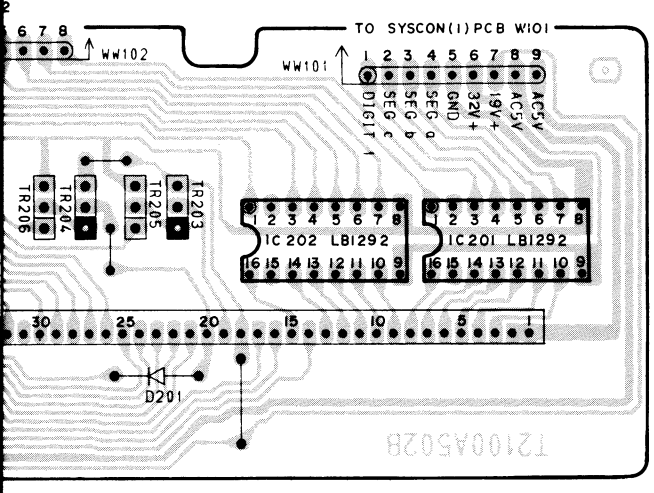
DTC144
DTA144



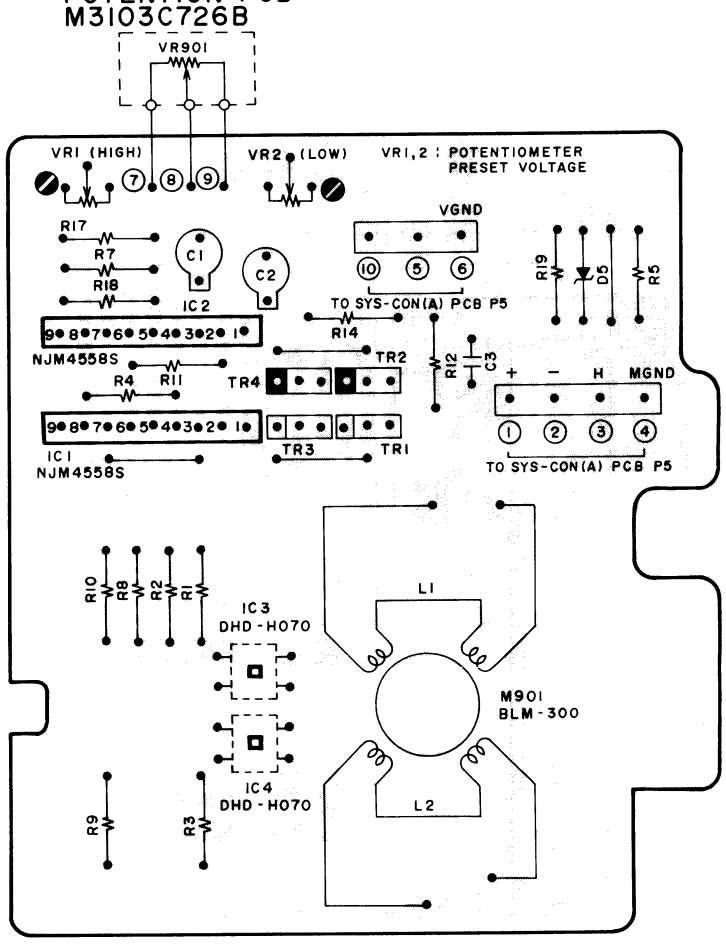

= NPN TRANSISTOR

= PNP TRANSISTOR

2SC2603
2SD1012
DTC144
DTC114
DTA143




## POTENTION PCB M3103C726B




MOTOR PCB M3103C726A

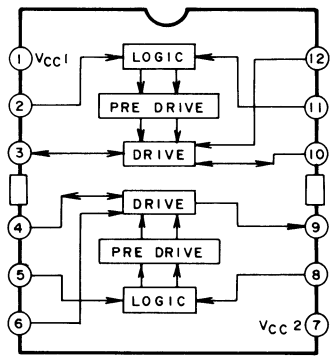
= PNP TRANSISTOR

= NPN TRANSISTOR

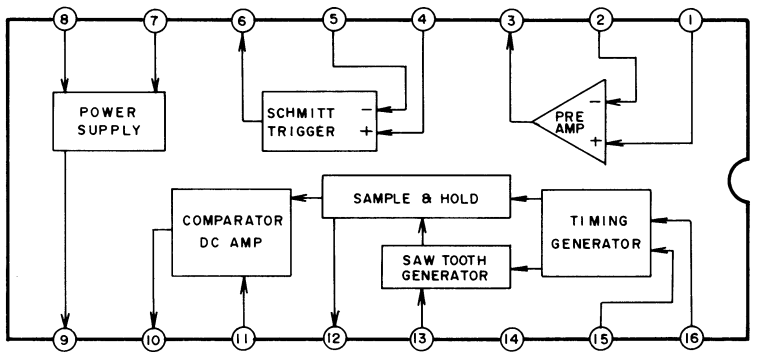
TR1,3 --- 2SC2274
TR2,4 --- 2SA984

E C B
2SC2274
2SA984

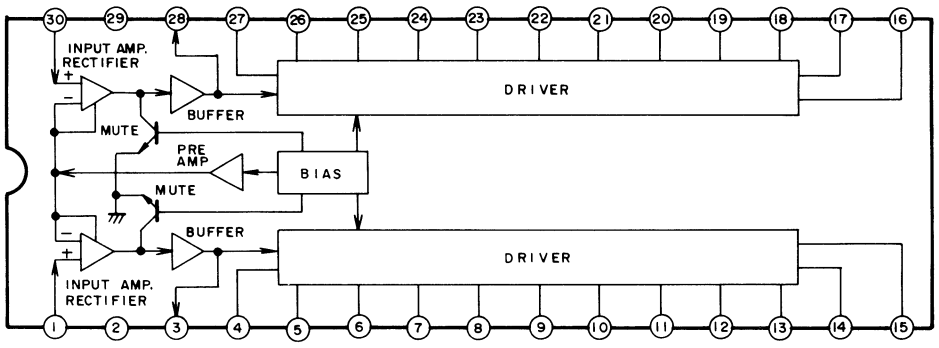
LB1649
(SYS-CON)




μPC1043C
(SYS-CON)

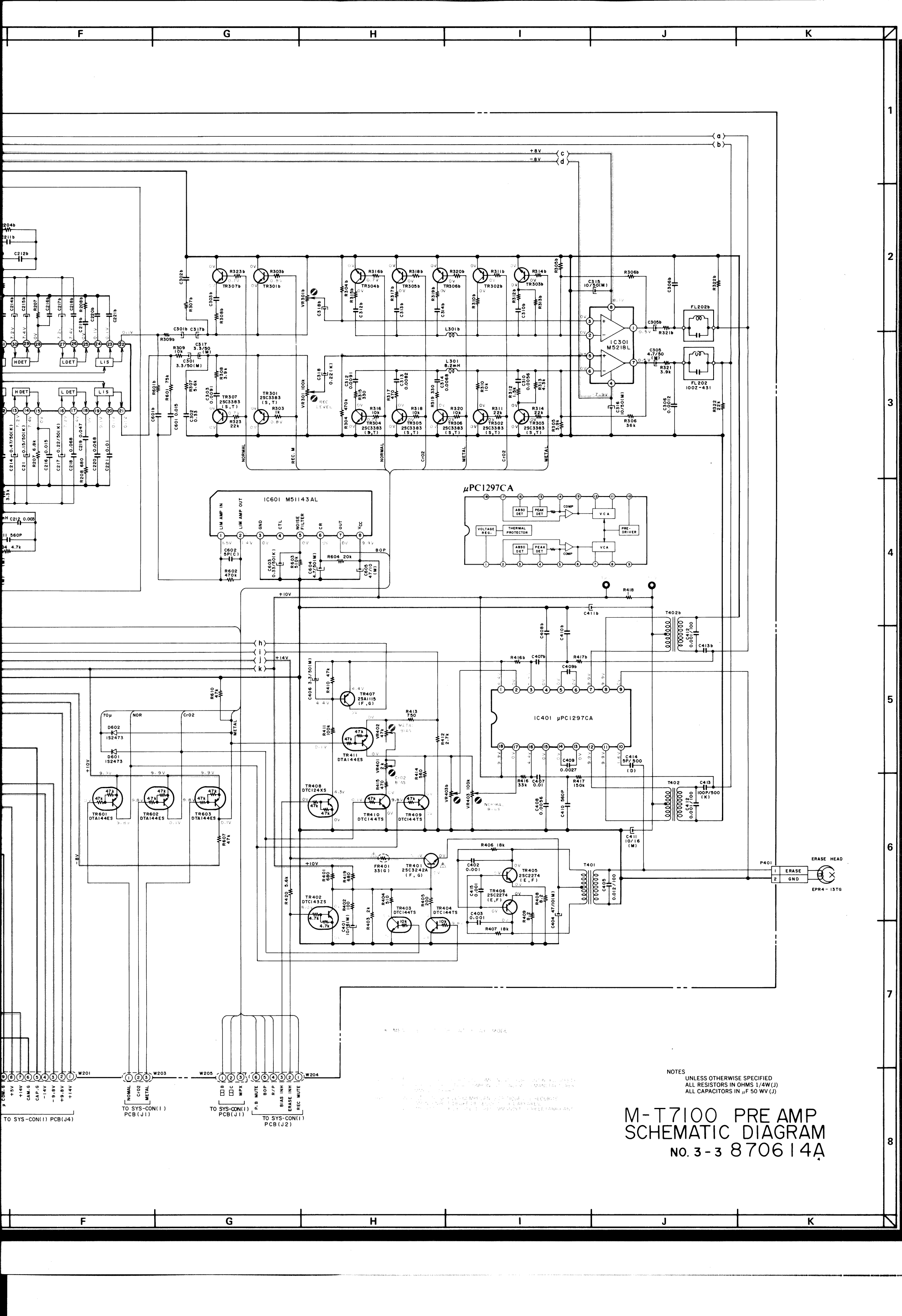



HA12067NT
(SYS-CON)



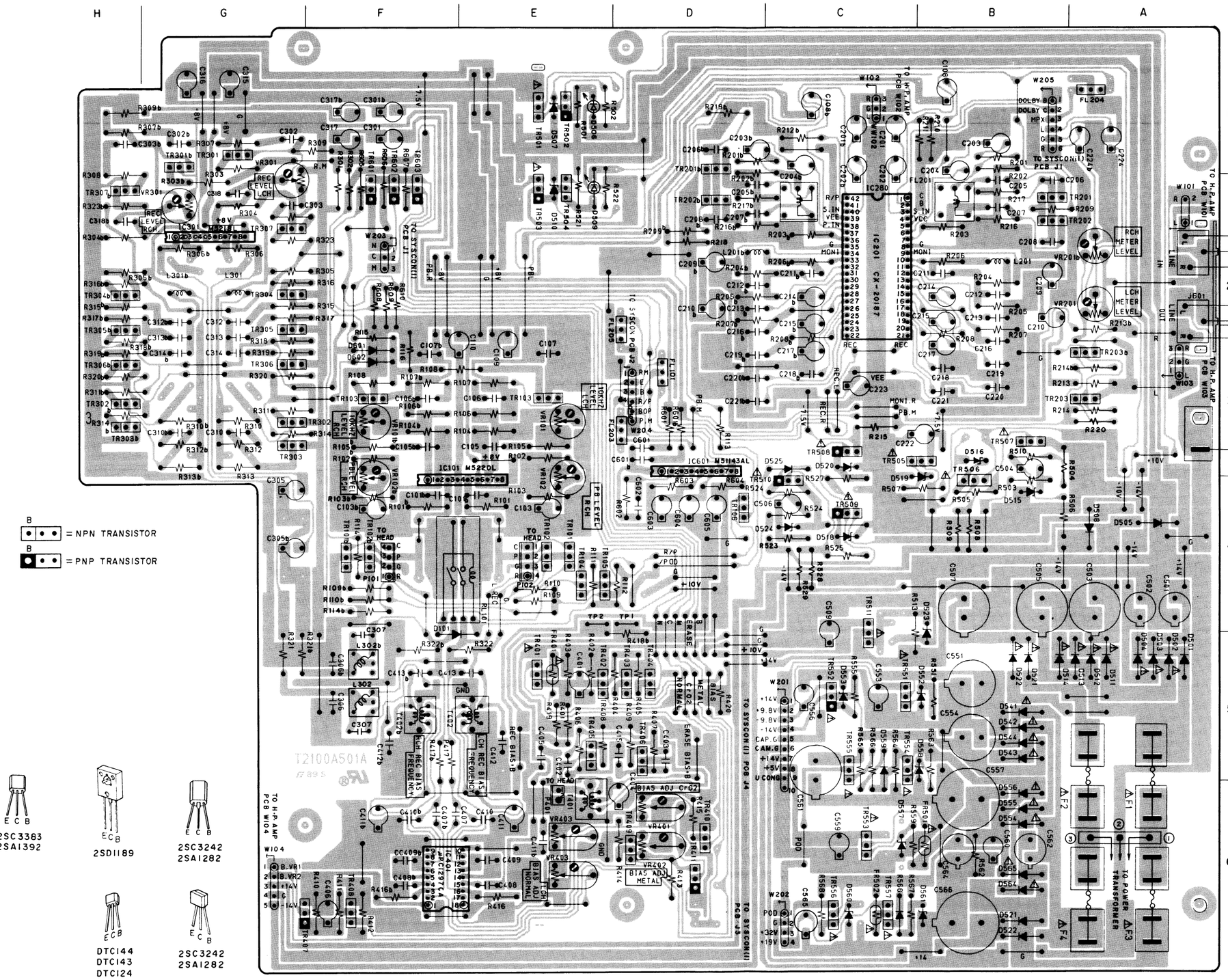
| * | U | C,A | E,V,S,B |
|---|---|---|---|
| F1, F2 | 250V 800mA | 125V 800mA | 250V T500mA |

| * | U | C,A | E,V,S,B |
|---|---|---|---|
| F3, F4 | 250V 1.25A | 125V 1.25A | 250V T800mA |

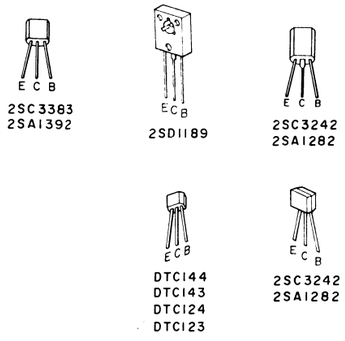



# M-T7100 PRE AMP SCHEMATIC DIAGRAM

NO. 3-3 870614A




B
= NPN TRANSISTOR
B
= PNP TRANSISTOR




LOCATION OF COMPONENTS

IC
IC101 . . . E4
IC201 . . . C2
IC301 . . . G2
IC401 . . . E6
IC601 . . . D3

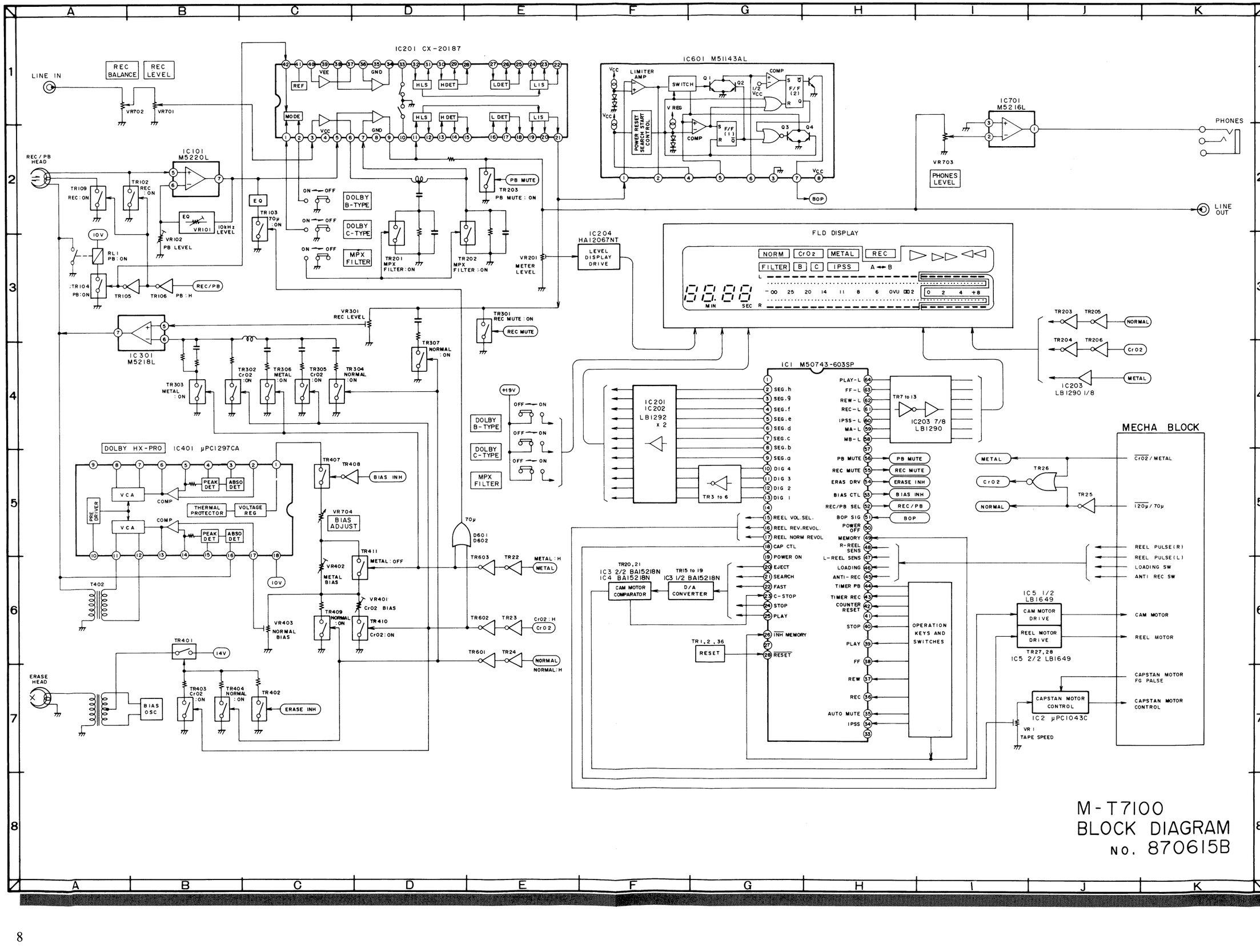
TRANSISTOR
TR101 . . . E4
TR101 . . . F4
TR102 . . . E4
TR102 . . . F4
TR103 . . . E3
TR103 . . . F3
TR104 . . . E4
TR105 . . . E4
TR106 . . . D4
TR201 . . . B2
TR201 . . . D1
TR202 . . . B2
TR202 . . . D2
TR203 . . . A3
TR203 . . . A3
TR301 . . . G1
TR301 . . . G1
TR302 . . . G3
TR302 . . . H3
TR303 . . . G3
TR303 . . . H3
TR304 . . . G2
TR304 . . . H2
TR305 . . . G3
TR305 . . . H3
TR306 . . . G3
TR306 . . . H3
TR307 . . . G2
TR307 . . . H2
TR401 . . . E5
TR402 . . . E5
TR403 . . . D5
TR404 . . . D5
TR405 . . . E5
TR406 . . . D5
TR407 . . . G6
TR408 . . . F6
TR409 . . . D6
TR410 . . . D6
TR411 . . . D6
TR501 . . . E1
TR502 . . . E1
TR503 . . . E2
TR504 . . . E2
TR505 . . . B3
TR506 . . . B3
TR507 . . . B3
TR508 . . . C3
TR509 . . . C4
TR510 . . . C4
TR511 . . . C5
TR551 . . . C5
TR552 . . . C5
TR553 . . . C6
TR554 . . . C5
TR555 . . . C5
TR556 . . . C6
TR557 . . . C6
TR601 . . . F2
TR602 . . . F2
TR603 . . . F2

CONNECTOR
W101 . . . . A2
W102 . . . . C1
W103 . . . . A3
W104 . . . . G6
W201 . . . . C5
W202 . . . . C6
W203 . . . . F2
W204 . . . . D3
W205 . . . . B1
P101 . . . . F4
P102 . . . . E4

2SC3383 . . TR101, TR102, TR103, TR201, TR202, TR203, TR301, TR302, TR303, TR304, TR305, TR306, TR307, TR501, TR504, TR505, TR506, TR507
2SC3242 . . TR401, TR511, TR551, TR557
2SC2274 . . TR405, TR406
2SC2603 . . TR554, TR556
2SA1392 . . TR502, TR503, TR508, TR509, TR510
2SA1115 . . TR407, TR555
2SA1282 . . TR552
2SD1189 . . TR553
DTC144 . . TR403, TR404, TR409, TR410, TR412
DTC143 . . TR402
DTC124 . . TR408
DTC123 . . TR104
DTC114 . . TR105, TR106
DTA144 . . TR411, TR601, TR602, TR603

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT




M-T7100
BLOCK DIAGRAM
No. 870615B